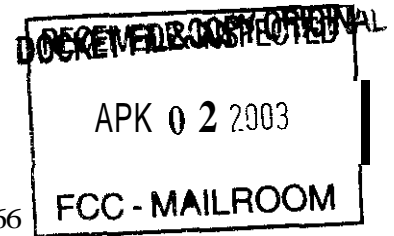


Before the  
Federal Communications Commission  
Washington, D.C. 20554



In the Matter of	)	
	)	
Amendment of Parts 1, 21, 73, 74 and 101 of the	)	WT Docket No. 03-66
Commission's Rules to Facilitate the Provision of	)	RM-10586
Fixed and Mobile Broadband Access, Educational	)	
and Other Advanced Services in the 2150-2162	)	
and 2500-2690 MHz Bands	)	
	)	
Part 1 of the Commission's Rules - Further	)	WT Docket No. 03-67
Competitive Bidding Procedures	)	
	)	
Amendment of Parts 21 and 74 to Enable	)	MM Docket No. 97-217
Multipoint Distribution Service and the	)	
Instructional Television Fixed Service	)	
Amendment of Parts 21 and 74 to Engage in Fixed	)	
Two-way Transmissions	)	
	)	
Amendment of Parts 21 and 74	)	WT Docket No. <u>02-68</u>
of the Commission's Rules With Regard to	)	RM-9718
Licensing in the Multipoint	)	
Distribution Service and in the	)	
Instructional Television Fixed Service for the	)	
Gulf of Mexico	)	

**NOTICE OF PROPOSED RULE MAKING  
AND MEMORANDUM OPINION AND ORDER**

**Adopted: March 13, 2003**

**Released: April 2, 2003**

**Comment Date:** 90 days after publication in the Federal Register

**Reply Comment Date:** 135 days after publication in the Federal Register

By the Commission: Chairman Powell, Commissioners Ahernathy and Copps issuing separate statements

**TABLE OF CONTENTS**

Heading	Paragraph #
I. INTRODUCTION AND EXECUTIVE SUMMARY .....	1
II. BACKGROUND .....	6
A. Establishment and Evolution of the Services .....	6
B. Spectrum Allocation and Current Band Plan for the Services .....	18
C. Application Processing Freezes and Filing Windows .....	21
D. Current Uses of the Band .....	23
E. The Coalition Proposal .....	30

III. DISCUSSION .....	32
A. Broadband Policy Goals and Objectives .....	32
B. Spectrum Policy Goals and Objectives .....	36
C. Problems with the Existing MDS/ITFS Rules.....	44
D. Changes to 2500-2690 MHz Band Plan .....	47
1. Background .....	47
2. Band Plan Alternatives .....	49
3. Response Channels .....	58
4. Utilization of Unassigned ITFS Spectrum.....	60
a. Geographic Area Licensing of Unassigned ITFS Spectrum .....	62
(i) Geographic Areas for Licenses .....	66
(ii) Bandwidth for Licenses .....	77
(iii) International Border Issues .....	78
b. Unlicensed Use of Unassigned ITFS Spectrum .....	79
5. Geographic Area Licensing for Current Licensees .....	83
a. Geographic Area Licensing for MDS BTA Authorization Holders .....	83
b. Geographic Area Licenses for Site-Licensed Incumbents .....	85
c. Gulf of Mexico Proceeding.....	89
6. Transition to New Band Plan .....	98
7. ITFS Eligibility Restrictions .....	107
8. Other Eligibility Restrictions .....	119
E. Technical Issues .....	130
1. Signal Strength Limits at Geographic Service Area Boundaries .....	131
2. Authorization of Mobile Operation .....	132
3. Power and Antenna Height Limits .....	133
4. Emission Limits .....	140
5. Technology .....	142
6. Unlicensed “Underlay” Operation .....	143
7. RF Safety .....	149
8. North American Datum (NAD) 83 Coordinate Data.....	150
9. MDS Response Station Hubs .....	151
10. 2150-2162 MHz band .....	152
11. Radiation from Stations that are Not Engaged in Communications .....	154
F. Standardization of Practices and Procedures .....	159
1. Consolidation of Procedural Rules in Part I.....	159
2. Consolidation of Service Specific Rules in Part 101.....	160
3. Standardization of Major and Minor Filing Requirements.....	161
4. Amendments to New and Modification Applications .....	164
5. Assignments of Authorization and Transfers of Control.....	165
6. Partitioning and Disaggregation .....	171
7. License Renewal .....	173
8. Special Temporary Authority .....	178
9. Ownership Information.....	181
10. Regulatory Status .....	182
11. Fee Issues .....	183
12. Discontinuance, Reduction or Impairment of Service.....	186
13. Foreign Ownership Restrictions .....	189
14. Performance Requirements.....	190
15. Annual Reports .....	203
G. Application Processing.....	204

- Propose to consolidate all service-specific rules for the Services under Parts 27 and 101 but seek comment on alternatives.

4. In the *MO&O*, we:

- Temporarily suspend, until the completion of this rulemaking proceeding, acceptance of applications for new ITFS licenses and applications to amend or modify either ITFS or MDS stations in the 2500-2690 MHz band, subject to certain exceptions; and
- Suspend the current construction deadline for MDS and ITFS authorization holders until the completion of this rulemaking proceeding.

5. In addition, we incorporate the dockets of two ongoing Commission proceedings into this NPRM & *MO&O* because they pertain to the Services.<sup>4</sup> In MM Docket No. 97-217, we address a minor issue concerning response stations that are not engaged in communications with their associated hubs to restrict their field strengths. In WT Docket No. 02-68, we propose to establish a Gulf of Mexico service area for the Services and issue licenses on that basis.

## 11. BACKGROUND

### A. Establishment and Evolution of the Services

6. Prior to 1963, the Commission allocated the 2500-2690 MHz band to the Fixed Service for shared use by Operational Fixed Service (OFS) stations and international control stations. The traditional Fixed Service use of this band was primarily private microwave communications uses such as multichannel voice and data circuits.<sup>5</sup>

7. In 1963, the Commission established ITFS in the band on a shared basis with existing Fixed Service stations.<sup>6</sup> When the Commission established ITFS, it indicated that the service was envisioned to be used for transmission of instructional material to selected receiving locations in accredited public and

---

<sup>4</sup> See Amendment of Parts 21 and 74 of the Commission's Rules With Regard to Licensing in the Multipoint Distribution Service and in the Instructional Television Fixed Service for the Gulf of Mexico, *Notice of Proposed Rulemaking*, WT Docket No. 02-68, 17 FCC Rcd 8446 (2002) (*Gulf Notice*); see also, Amendment of Parts 1, 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-way Transmissions, *Report and Order on Further Reconsideration and Further Notice of Proposed Rulemaking*, MM Docket No. 97-217, 15 FCC Rcd 14,566 (2000) (*Two-way FNPRM*).

<sup>5</sup> Amendment of the Commission's Rules With Regard to the Instructional Television Fixed Service, the Multipoint Distribution Service, and the Private Operational Fixed Microwave Service; and Applications for an Experimental Station and Establishment of Multi-Channel Systems, *Report and Order*, 48 Fed. Reg. 33873 ¶ 8 (1983) (*1983 R&O*).

<sup>6</sup> See *1983 R&O*, 48 Fed. Reg. 33873 ¶ 12. Other Part 101 licensees have been authorized to use the band by waiver. See Applications of Nevada Bell for Construction and Authorization in the Point-to-Point Microwave Radio Service and Request for Waiver of the Rules, *Memorandum Opinion and Order*, 3 FCC Rcd 7217 (CCB and MMB 1988).

<sup>7</sup> See Educational Television *Report and Order*, Docket No. 14744, 39 FCC 846 (1963) (*MDS R&O*), *recon. denied*, 39 FCC 873 (1964) (*ETV Decision*).

rules governing the Services.’ Our proposals are intended to foster the provision of innovative and traditional service offerings to consumers as well as educational, medical and other institutions, to simplify the licensing process, and to delete obsolete rules and unnecessary regulatory burdens.

2. The rule changes proposed in this *NPRM* would facilitate the provision of high-speed data and voice services accessible to mobile as well as fixed users on channels that today are used primarily for one-way video operations to fixed locations.’ These changes would ultimately affect between 142 and 190 MHz of spectrum, depending upon which of the alternative sets of rules proposed in this Notice are adopted. We emphasize, however, that we do not intend to evict any incumbent licensees from the affected band if they have been in compliance with our rules and continue to comply with our rules when we modify or augment them nor do we intend to undermine the educational mission of ITFS licensees. Far from evicting existing licensees, we anticipate that the streamlined regulations and revised spectrum plan adopted in this proceeding will facilitate the provision of advanced wireless communications services by incumbent licensees.

3. The following is a summary of our major proposals and determinations. In the *NPRM*, we:

- Seek comment on whether and how to reconfigure the 2500-2690 MHz band;
- Seek comment on the best means of ensuring the efficient utilization of unassigned ITFS spectrum, including geographic area licensing and unlicensed operation;
- Propose to convert site-by-site licenses of MDS and ITFS incumbents to geographic service areas;
- Seek comment on how best to promote increased access to and efficient utilization of ITFS spectrum;
- Propose technical rules to increase licensee flexibility and protect incumbent operations in the 2500-2690 MHz band;
- Propose technical and service rules for mobile operations;
- Propose to simplify and streamline the licensing process for the Services;
- Propose application filing and processing procedures to facilitate implementation of the Services into the Universal Licensing System (ULS) administered by the Wireless Telecommunications Bureau; and

---

<sup>2</sup> A Proposal for Revising the MDS and ITFS Regulatory Regime, submitted by the Wireless Communications Association International, Inc., the National ITFS Association and the Catholic Television Network, RM-10586 (filed Oct. 7, 2002). WCA is the trade association of the wireless broadband industry. NIA is a non-profit, professional organization of ITFS licensees, applicants and others interested in the ITFS. CTN is an association of Roman Catholic archdioceses and dioceses that operate many of the largest parochial school systems in the United States. These entities represent that the proposals contained in the paper reflect a consensus among the organizations concerning rule changes for the 2500-2690 MHz band. See Coalition Proposal at 1, n. 1

<sup>3</sup> Two-way data and mobile communications are permissible in the 2500-2690 band under existing rules, but the existing regulatory structure has limited the ability of operators to deploy two-way services and made it nearly impossible to provide mobile services.

meets just prior to WRC-2003. Concerning the 2500-2690 MHz band, the revision to the recommendation contains only scenarios for possible frequency arrangements, as this band is currently being considered by some administrations for additional **IMT-2000** requirements that cannot be met in lower frequency bands.

13. In this regard, on November 15, 2002, the Electronic Communications Committee (ECC), of the European Conference of Postal and Telecommunications Administrations, adopted Decision 6, wherein it designated the 2500-2690 MHz band for **IMT-2000** use. The band is to be made available to **IMT-2000** by 1 January 2008. Through a future ECC Decision, slated for the end of 2004, a detailed frequency arrangement (band plan) is to be developed. In ITU Region 2, The Inter-American Telecommunication Commission (CITEL) Permanent Consultative Committee III; Radiocommunications (PCC.III) has also been developing, for the Americas, options for **IMT-2000** band pairings based on the bands identified for **IMT-2000** by the ITU. Since many CITEL Administrations use the 2500-2690 MHz band for the fixed service and have no plans to use it for **IMT-2000**, the 2500-2690 MHz band was not included in recently approved Recommendation 70, *Frequency Arrangements For IMT-2000 In The Bands 806 To 960 MHz, 1710 To 2025 MHz And 2110 To 2200 MHz*.

14. In 1991, in an effort to provide more spectrum for multichannel video operations, the Commission reallocated three 6-megahertz channels in the 2500-2690 MHz band (H channels) from the **OFS** for **MDS**.<sup>32</sup> The Commission, however, did reallocate the response channels associated with the three H channels, as well as the response channels associated with the **E3**, **E4**, **F3**, and **F4** **MDS** channels to the **OFS**.<sup>33</sup> The net result of these reallocations was to provide an allocation of 120 MHz, or 20 6-MHz main station channels, to **ITFS**, and 66 MHz, or 11 main station channels, to **MDS** in the 2500-2690 MHz band. In addition, the **MDS** service has four 125-KHz response channels (a total of 0.5 MHz), and **ITFS** has 20 response channels (a total of 2.5 MHz).<sup>34</sup> As noted above, **OFS** has seven response channels (a total of 0.875 MHz). The remaining spectrum is either allocated for the **MDS** Channel 1 (2150-2156 MHz associated response channel or is unassigned (2689.875-2690 MHz)). Overall, the allocation for **MDS** amounts to 66.5 MHz and the allocation for **ITFS** amounts to 122.5 MHz.

15. The Commission added the mobile service allocation to this band, to provide additional flexibility to make it potentially available for advanced wireless services, including **IMT-2000** and future

---

<sup>32</sup> Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service, *Second Report and Order*, Gen Docket No. 90-54, 6 FCC Rcd 6792 (1991), *recon. denied*, 7 FCC Rcd 5648 (1992). In the *First Report & Order* in this proceeding, the Commission made **MDS** operators eligible to use microwave frequencies in the Cable Television Relay Service (**CARS**). Amendment of Parts 21, 43, 74.78 and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multi-Channel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service, *Report and Order*, 5 FCC Rcd 6411, 6423 (1990). **CARS** is primarily a service for carrying video. Amendment of Eligibility Requirement in Part 78 Regarding 12 GHz Cable Television Relay Service, *Report and Order*, 17 FCC Rcd 9930, 9945-6 (2002). **ITFS** operators are not eligible for **CARS** licenses, except in very limited circumstances. 47 C.F.R. § 78.13(e).

<sup>33</sup> *Id.* The specific response channels are centered on 2686.9375, 2687.9375, 2688.5625, 2688.6875, 2688.9375, 2689.5625 and 2689.6875 MHz. See 47 C.F.R. § 101.147(g).

<sup>34</sup> The response channels associated with Channels **E3**, **FA**, **F3**, and **F4** are allocated to the Private Operational Fixed Point-to-Point Microwave Service. See 47 C.F.R. §§ 74.902(c) note, 101.147(g).

private schools, colleges and universities for the formal education of students.' It also permitted ITFS licensees to use the channels for incidental purposes. These incidental purposes included the transmission of cultural and entertainment material to those receiving locations; the transmission of special training material to selected receiving locations outside the school system such as hospitals, nursing homes, training centers, clinics, rehabilitation centers, commercial and industrial establishments; the transmission of special material to professional groups or individuals to inform them of new developments and techniques in their fields and instruct them in their use; and to perform other related services directly concerned with formal or informal instruction and training.' In addition, when the ITFS facilities were not being used for such incidental purposes, the licensee could use them **for** administrative traffic (e.g., transmission of reports, assignments and conferences with personnel);'' however, individual stations, or complete systems could not be licensed solely for handling administrative traffic."

8. In an effort to promote the development of ITFS during its infancy, the Commission in 1963 restricted the authorization of new OFS stations for three years except for modifications or expansions of existing stations, or **for** the use of the band by OFS eligible entities for television transmission in accord with ITFS technical standards.'' The Commission placed this restriction on new OFS stations because it intended to observe the amount of use of these channels by educators and determine what course of action to take to encourage the fullest development of the 2500-2690 MHz band at the end of the three-year period.'' Based in part on those observations, in 1971 the Commission designated twenty-eight 6-megahertz channels in this band and the associated response (R) channels<sup>14</sup> exclusively for ITFS use.<sup>15</sup>

9. In 1974, the Commission established MDS as a new common carrier service and allotted the 2150-2160 MHz band for such use.<sup>16</sup> The Commission anticipated that the MDS spectrum would be used

<sup>8</sup> See 1983 R&O, 48 Reg. Fed. 33873,33875 ¶ 9 citing *ETV Decision*, 39 FCC 846,853 ¶ 25

<sup>9</sup> *Id*

<sup>10</sup> *Id*

<sup>11</sup> *Id.*

<sup>12</sup> See 1983 R&O, 48 Fed. Reg. 33873,33875 ¶ 8, citing *ETV Decision* 39 FCC 846.

<sup>13</sup> *Id.* This review of the use of the band was delayed because educational interests encountered problems in preparing, funding, implementing and developing operational expertise with regard to ITFS.

<sup>14</sup> Each of the six megahertz channels in the 2500-2690 MHz band has an associated 125 kilohertz response channel. The response channels are narrowband audio channels located in the 2686-2689.875 MHz segment of the band and generally used with the associated primary 6-megahertz channel **for** two-way communications (e.g., talk-back capability from remote sites such as classrooms).

<sup>15</sup> See Amendment of Parts 2 and 74 of the Commission's Rules and Regulations to Establish a New Class of Educational Television Service **for** the Transmission of Instructional and Cultural Material to Multiple Receiving Locations on Channels in the 2500-2690 MHz Frequency Band, Amendment of Parts 81, 87, 89, 91, and 93, *Second Report and Order*, Docket No. 14744.30 F.C.C.2d 197 ¶ 12 (1971) (*MDS 2<sup>nd</sup> R&O*).

<sup>16</sup> Amendment of Parts I, 2, 21, and 43 of the Commission's Rules and Regulations to Provide for Licensing and Regulation of Common Carrier Radio Stations in the Multipoint Distribution Service, *Report and Order*, Docket No. 19493, 45 FCC 2d 616 (1974), *recon. denied*, 57 FCC 2d 301 (1975) (*1974 R&O*). See also 1983 R&O, 48 Fed. Reg. 33873 ¶ 5. Amendment of Parts 2 and 74 of the Commission's Rules to Establish a New Class of Educational Television Service for the Transmission of Instructional and Cultural Material to Multiple Receiving (continued....)

high-speed, high capacity broadband service, including two-way Internet service via cellularized communication systems.<sup>44</sup> Later, the Commission established a mobile, except aeronautical mobile, allocation in the 2500-2690 MHz band.<sup>45</sup>

## B. Spectrum Allocation and Current Band Plan for the Services

18. In the United States, the 2500-2690 MHz band is currently allocated to the fixed, mobile except aeronautical mobile, Broadcast Satellite Service (**BSS**), and Fixed Satellite Service (**FSS**) on a co-primary basis for non-Federal Government use. The Commission, however, recently proposed to delete the **BSS** and **FSS** allocations from the band in order to remove regulatory uncertainty from the 2500-2690 MHz band.<sup>46</sup>

19. Since January 2001, the Commission has been examining whether the 2150-2162 MHz band would be appropriate for advanced wireless services (**AWS**).<sup>47</sup> In 2002, the Commission reallocated the 2150-2155 MHz segment of this band to support new advanced wireless services.<sup>48</sup> The Commission stated that it would identify relocation spectrum for MDS licensees in a later, separate proceeding<sup>49</sup> and has asked commenters to address the impact of reallocating this spectrum, to identify other frequency bands that could accommodate MDS services, and to comment on how the Emerging Technologies relocation procedures would apply.<sup>50</sup> Subsequently, on January 29, 2003, the Commission tentatively concluded that it should reallocate MDS spectrum at 2155-2160/62 MHz for new fixed and mobile

---

<sup>44</sup> Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-way Transmissions, MM Docket No. 97-217, *Report and Order*, 13 FCC Rcd 19,112 (1998), *recon.*, 14 FCC Rcd 12,764 (1999), *further recon.*, 15 FCC Rcd 14,566 (2000) (*Two-Way Order*).

<sup>45</sup> See *Mobile Report and Order*, 16 FCC Rcd 17,222.

<sup>46</sup> See Amendment of Parts 2, 25 and 87 of the Commission's Rules to Implement Decisions from World Radiocommunication Conferences Concerning Frequency Bands Between 28 MHz and 36 GHz and to Otherwise Update the Rules in this Frequency Range, *Notice of Proposed Rule Making*, ET Docket No. 02-305, 17 FCC Rcd 19,756 (2002).

<sup>47</sup> Advanced Wireless Services is the collective term we use for new and innovative fixed and mobile terrestrial wireless applications using bandwidth that is sufficient for the provision of a variety of applications, including those using voice and data (such as internet browsing, message services, and full-motion video) content. Although AWS is commonly associated with so-called third generation (3G) applications and has been predicted to build on the success of such current-generation commercial wireless services as cellular and Broadband PCS, the services ultimately provided by AWS licensees are only limited by the fixed and mobile designation of the spectrum we allocate for AWS and the service rules we ultimately adopt for the bands.

<sup>48</sup> See *AWS Allocation Order*, 17 FCC Rcd 23,193.

<sup>49</sup> *Id.* at 23,212-23,213 ¶¶ 41

<sup>50</sup> See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, ET Docket No. 00-258, *Memorandum Opinion and Order and Further Notice of Proposed Rulemaking*, 16 FCC Rcd 16,043 ¶¶ 40-41 (2001).

ultimately allowing them to lease all but a small proportion of their capacity to commercial operators.” While the ITFS community requested that twenty-five percent be required to be used for educational purposes or available for recapture **for** educational purposes, the Commission decided to allow ITFS licensees to reserve only five percent for educational purposes.” In 1987, the Commission allowed MDS operators to elect non-common carrier (and non-broadcast) status, leaving them subject *to* regulation pursuant to ~~Part~~ 21 of the Commission’s Rules and the general provisions of Title III of the Communications Act of 1934, which apply to all radio station **licensees**.<sup>27</sup> The same year, the Commission eliminated the time-of-day restrictions **on** leasing ITFS spectrum and authorized operators to use automatic switching **equipment**.<sup>28</sup> In this same general timeframe, the Commission continued to relax requirements concerning **ITFS** licensees leasing spectrum **for MDS operations**.<sup>29</sup>

11. For several years, the International Telecommunication Union (ITU) has been fostering the development of advanced wireless systems, commonly referred to as International Mobile Telecommunications-2000 (IMT-2000). It has developed a series of technical recommendations and has identified a number of frequency bands that could be used to implement IMT-2000 systems. The 2000 World Radiocommunication Conference (WRC-2000) identified, among other bands, the 2500-2690 MHz band for possible terrestrial IMT-2000 **use**.<sup>30</sup> WRC-2000 also adopted language stating that a country may use any of the bands identified for IMT-2000, that IMT-2000 bands may also be used by other services that have allocations in those bands, and that IMT-2000 services do not have priority over other allocated services.<sup>31</sup> Study and implementation of IMT-2000 is ongoing within Working Party 8F (WP 8F) of the ITU-R.

12. WP 8F has developed a revision to Recommendation ITU-R M.[1036-1] that presents recommended frequency arrangements for IMT-2000 in the bands identified by the ITU. It is expected that this revision will be considered for adoption by the upcoming meeting of the Radio Assembly which

---

<sup>25</sup> See para. 109, *infra*

<sup>26</sup> See Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-way Transmissions, *Report and Order*, 13 FCC Rcd 19112, 19157 ¶¶ 86-87 (1998).

<sup>27</sup> Multipoint Distribution Service Regulatory Classification, *Report and Order*, 52 Fed. Reg. 27553 (1987) (summarizing FCC 87-210, released July 16, 1987).

<sup>28</sup> Amendment of Parts 21, 43, 74, 78, and 94 of the Commission’s Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, & Cable Television Relay Service, GN Docket No. 90-54, *Order on Reconsideration*, 6 FCC Rcd 6764, 6714 (1991).

<sup>29</sup> For example, the Commission eliminated the requirement that ITFS licensees fulfill their minimum educational usage obligations by transmitting such content on their own stations, allowing them the option of transmitting it on other licensees’ ITFS or MDS stations. See Two-way *R&O*, 13 FCC Rcd at 19165-19166 ¶¶ 100-101.

<sup>30</sup> See *Final Acts of the World Radiocommunication Conference (Istanbul, WRC-2000)*. At WRC-2000, the United States proposed that the 698-960 MHz, 1710-1885 MHz, and 2500-2690 MHz bands be identified for the terrestrial component of IMT-2000 and other advanced communication applications. During preparations for WRC-2000, the United States committed to studying the feasibility of using all or parts of these bands for IMT-2000.

<sup>31</sup> *Id.* See also RR 5.384A in the ITU Radio Regulations, Edition of 2001, Geneva



22. The Balanced Budget Act of 1997 (Budget Act) expanded the Commission's competitive bidding authority under Section 309(j) of the Communications Act by adding provisions governing auctions for broadcast and other previously exempt services.<sup>56</sup> In a subsequent order, the Commission concluded that the legislation required that competing ITFS applications be subject to auction.<sup>57</sup> The Commission expressed concern that Section 309(j), as adopted, might not reflect Congress' intent with regard to the treatment of competing ITFS applications.<sup>58</sup> Given the instructional nature of the service and the reservation of ITFS spectrum for noncommercial educational use, the Commission thought it possible that Congress did not intend its expansion of our auction authority in the Budget Act to include that service. Accordingly, the Commission did not proceed immediately with an auction of ITFS applications<sup>59</sup> but sought Congressional guidance with regard to auctioning ITFS by proposing that Congress exempt ITFS applications from competitive bidding.<sup>60</sup> To date, however, Congress has given no indication that it intends to exempt ITFS applications from competitive bidding. The Commission has not yet conducted an ITFS auction.

#### D. Current Uses of the Band

23. Operators are providing **four** kinds of basic service offerings in the 2500-2690 MHz band today: (1) downstream analog video; (2) downstream digital video; (3) downstream digital data; and (4) downstream/ upstream digital data. Licensees have deployed or sought to deploy three alternative kinds of system configurations: high powered video stations, high power fixed two-way systems and low power, cellularized two-way systems.

24. Traditionally high powered video stations consist of a main transmitter located at or near the center of a 35-mile-radius protected service area (PSA) with the possibility of operating a few booster stations in the same **PSA**. In 1996, the Commission authorized some high powered video stations to serve Basic Trading Areas (BTAs) consisting of an aggregation of counties.<sup>61</sup> Homes, businesses, and institutions receive signals through outside antennas and microwave receivers. This type of system provides fixed, one-way video service, either analog or digital. Analog stations support a maximum of

<sup>56</sup> 47 U.S.C. § 309(j).

<sup>57</sup> Implementation of Section 309(j) of the Communications Act—Competitive Bidding for Commercial Broadcast and Instructional Television Fixed Services Licenses, Reexamination of the Policy Statement on Comparative Broadcast Hearings, Proposals to Reform the Commission's Comparative Hearing Process to Expedite the Resolution of Cases, **First Report and Order**, MM Docket No. 97-234, GC Docket No. 92-52, and GEN Docket No. 90-264, 13 FCC Rcd 15920, 15999-16001 (1998), recon. *denied*, 14 FCC Rcd 8724, *modified*, 14 FCC Rcd 12,541 (1999), *aff'd sub nom. Orion Communications, Ltd. v. FCC*, 213 F.3d 761 (D.C. Cir. 2000).

<sup>58</sup> Implementation of Section 309(j) of the Communications Act—Competitive Bidding for Commercial Broadcast and Instructional Television Fixed Service, **First Report and Order**, MM Docket No. 97-234, 13 FCC Rcd 15920, 16002 ¶ 204 (1998).

<sup>59</sup> *Id.*

<sup>60</sup> Section 257 Report to Congress, **Report**, 15 FCC Rcd 15376, 15445 ¶ 183 (2000)

<sup>61</sup> In preparing for the 1996 MDS auction, the Commission noted that the industry was beginning to deploy digital rather than analog transmission facilities and that digital transmission would allow more flexibility to tailor signal coverage to geographic boundaries using multiple transmitting facilities. **MDS Auction Report and Order**, 10 FCC Rcd 9,589, 9,606, ¶ 29. The Commission considered alternative kinds of geographic service areas and concluded that BTAs most closely approximated the territories served by MDS operators. *Id.* at 9604-9606, ¶¶ 26-27.

generations of wireless systems.” The Commission also said that because incumbent ITFS and MMDS licensees extensively use the band the Commission would not relocate these licensees **nor** modify their licenses. Instead, the Commission would rely on market forces rather than making regulatory judgments about the best use of the **band**.<sup>36</sup> The Commission recognized that under current technology and service rules, fixed and mobile sharing of this band did not appear feasible, but committed to exploring service rules to permit mobile operations in a separate future proceeding.”

16. ITFS licenses are site-based licenses. Prior to 1995, MDS licenses were **also** site-based. In 1995, the Commission adopted rules to distribute unused MDS spectrum through competitive **bidding**.<sup>38</sup> The licensees who acquired their spectrum through competitive bidding are required to protect pre-existing site-based licensees.” Under current rules, if an incumbent site-based MDS license is forfeited, the incumbent’s service area shall merge and become part of the geographic area licensee’s service area.” The **BTA** authorization holder, however, cannot operate within that area until it files a long form application to operate a transmitter and the Commission grants that **application**.<sup>41</sup>

17. Recently, the Commission has provided MDS and ITFS licensees with additional technical flexibility. In 1993, the Commission allowed ITFS licensees to shift their required educational programming onto fewer than their authorized number of channels by channel loading, i.e., an ITFS licensee could move all of its ITFS program requirements onto one of its four channels so that it could lease the remaining three channels on a twenty-four-hour basis to a wireless cable **operator**.<sup>42</sup> In 1996, the Commission permitted MDS and ITFS licensees to employ digital **technologies**.<sup>43</sup> In 1998, the Commission allowed MDS and **ITFS** licensees to construct digital two-way systems capable of providing

---

<sup>35</sup> See Amendment of **Part 2** of the Commission’s Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, *First Report and Order and Memorandum Opinion and Order*, ET Docket No. 00-258, 16 FCC Rcd 17,222 (2001) (*Mobile Report and Order*).

<sup>36</sup> *Id.* at 2.

<sup>37</sup> *Id.* at 30

<sup>38</sup> See Amendment of Parts 21 and 74 of the Commission’s Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service, *Report and Order*, MM Docket No. 94-131, 10 FCC Rcd 9589 (1995) (*MDS Auction R&O*). In March 1996, the Commission completed an auction of MDS licenses for unused spectrum in each of 493 BTAs and BTA-like areas. FCC Fact Sheet, *Auction 6: Multipoint/Multichannel Distribution Services*, accessible on the Commission’s web site at <http://wireless.fcc.gov/auctions/06/factsheet.html>.

<sup>39</sup> See 47 C.F.R. §§ 21.902(a)(3),(4); 21.938(b)(2).

<sup>40</sup> 47 C.F.R. § 21.932(a).

<sup>41</sup> 47 C.F.R. §§ 21.925(c)(4), 21.932(c)

<sup>42</sup> Amendment of Part 74 of the Commission’s Rules Governing Use of the Frequencies in the Instructional Television Fixed Service, *Report and Order*, MM Docket 93-106, 9 FCC Rcd 3,360 ¶ 2. See also 47 C.F.R. § 74.931(e)(9).

<sup>43</sup> See Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations, *Declaratory Ruling and Order*, 11 FCC Rcd 18,839 (1996) (*Digital Modulation Declaratory Ruling and Order*).

28. By January 2002, Sprint and WorldCom had each invested more than \$2 billion acquiring MDS licensees covering about 31 and 30 million households, respectively, and each of those companies had spent another \$1 billion on system **construction**.<sup>67</sup> WorldCom was rolling **out** MDS high-speed Internet access in new markets, many of them **rural**.<sup>68</sup> The third largest MDS company, Nucentrix Broadband Services, Inc., was offering two-way high-speed Internet access service in Austin and Sherman-Denison, Texas, and conducting a trial of the service in Amarillo, Texas, and at least twenty-four other companies offered fixed wireless services in approximately thirty-three **counties**.<sup>69</sup> In November 2002, Clearwire Technologies, Inc., filed comments indicating that it had leased ITFS spectrum in more than 20 markets and would launch a wireless broadband Internet access service in the first of those markets in January, 2003.<sup>70</sup>

29. We are not aware of any current, comprehensive source of information on the nature or extent of **ITFS** services other than **our** license files. However, in response to the public notice seeking comments on the Coalition Proposal: eight **ITFS** licensees and related organizations provided quantified information on the extent of their own services, most of them local. Various local branches of the Roman Catholic Church provide **ITFS** programming to 153,000 students.” The F Corporation and the George Mason University (GMU) Instructional Foundation provide GMU instructional programming, C-

(Continued from previous page)

Services, *Seventh Report*, 17 FCC Rcd 12,985, 13,038 n.367 (2002) (*Seventh Report*) citing *U.S. Wireless Industry Data Sub and Revenue Projections, Interactive Mobile Investor*, Kagan World Media, Mar. 31, 2002, at 3 (7.8 million wireless Internet subscribers in the United States at the end of 2001); Yankee Group, *The Yankee Group: Highlights of New Surveys and Publications* (visited Mar. 6, 2002) <http://www.yankeegroup.com/webfolder/yg21a.nsf/0/16AE3A28DBFF8EC85256B19005F8428?OpenDocument> (wireless Internet adoption was “rapidly approaching 10 million users”).

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> Clearwire Technologies, Inc., Comments in RM-10586, at 2 filed November 14, 2002. On January 7, 2003, Clearwire announced the availability of its service in Jacksonville, Florida. News Release. Clearwire Launches Next-Generation Wireless Broadband Service, Jan. 7, 2003 (accessible online at <http://www.clearwire.com/default.asp?NodeId=967>).

<sup>71</sup> Wireless Telecommunications Bureau Seeks Comment on Proposal to Revise Multichannel Multipoint Distribution Service and the Instructional Television Fixed Service Rules, *Public Notice*, 17 FCC Rcd 20526 (WTB 2002) (*MDS/ITFS Comment Public Notice*). The due dates for comments and replies were initially set to November 14 and 21, 2002, but were later extended to November 21 and 29, respectively.

<sup>72</sup> See Archdiocese of Los Angeles Comments, filed Nov. 14, 2002, at 2 (50,000 Los Angeles area students); See Department of Education, Archdiocese of New York Comments, filed Nov. 14, 2002 (47,000 New York area students); Catholic Telemedia Network Comments, at 1-2, filed Nov. 14, 2002, (38,000 San Francisco area students); Diocese of Orange Comments, at 1, filed Nov. 14, 2002, (18,000 Orange County area students); see also, Diocese of Dallas Comments, at 1, filed Nov. 14, 2002, (Claims to serve more than 600,000 “constituents” but does not indicate how many use or have access to its ITFS channels). Forty-seven ITFS licensees filed joint comments that did not include quantified information on the extent of their operations. Joint Comments of ITFS Parties, filed Nov. 14, 2002.

services, including AWS.<sup>51</sup>

20. Under the MDS/ITFS band plan for the 2500-2690 MHz band, there are thirty-one 6-megahertz channels, of which twenty-four have associated, 125-kilohertz (R) channels. Of the thirty-one 6-megahertz channels in the 2500-2690 MHz band, the Commission has allocated twenty channels (A, B, C, D, and G channels) for ITFS and eleven channels (E, F, and H channels) for MDS. (This does not include the two additional MDS channels at 2150-2162 MHz.). The following chart illustrates the current plan.

1	2/2A
---	------

A1	B1	A2	B2	A3	B3	A4	B4	C1	D1	C2	D2	C3	D3	C4	D4	E1	F1	E2	F2	E3	F3	E4	F4	G1	H1	G2	H2	G3	H3	G4	R
----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	---

### C. Application Processing Freezes and Filing Windows

21. In 1993, the Commission suspended the ITFS applications process and announced plans to adopt a revised process for handling such applications.<sup>52</sup> At the same time, the Commission noted that it would continue to accept major change proposals for ITFS applications to accommodate settlement agreements among mutually exclusive applicants.<sup>53</sup> In 1995, the Commission provided a five-day filing window for the filing of applications for new construction permits and for major changes to existing ITFS facilities.<sup>54</sup> In 1996 the Mass Media Bureau announced a sixty-day filing window for a limited class of applications, permitting the filing of ITFS modification applications and amendments to pending ITFS applications proposing to co-locate with an authorized wireless cable facility, in order, *inter alia*, to facilitate marketwide settlements.<sup>55</sup>

<sup>51</sup> See Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems, *Third Report and Order, Third Notice of Proposed Rulemaking, and Second Memorandum Opinion and Order*, ET Docket No. 02-258, FCC 03-16, rel. Feb. 10, 2003.

<sup>52</sup> Amendment of Part 74 of the Commission's Rules with Regard to the Instructional Television Fixed Service, *Notice of Proposed Rulemaking*, MM Docket No. 93-24, 8 FCC Rcd 1275 (1993).

<sup>53</sup> *Id.* at 1277 n.13. See also Amendment of Part 74 of the Commission's Rules with Regard to the Instructional Television Fixed Service, *Order and Further Notice of Proposed Rulemaking*, MM Docket No. 93-24, 9 FCC Rcd 3348, 3354 (1994). The Commission reiterated this policy in the *Report and Order* in MM Docket No. 93-24, 10 FCC Rcd 2907, 2911 (1995).

<sup>54</sup> See Notice of Instructional Television Fixed Service Filing Window From October 16, 1995, through October 20, 1995, *Public Notice*, Report No. 23565A (rel. Aug. 4, 1995).

<sup>55</sup> Mass Media Bureau Announces Commencement of Sixty (60) Day Period for Filing ITFS Modifications and Amendments Seeking to Co-Locate Facilities with Wireless Cable Operations, *Public Notice*, 11 FCC Rcd 22,422 (1996).

MDS and **ITFS** regulatory structure is needed” for such new services to develop and flourish in this band.<sup>82</sup>

**31.** The Coalition suggests a number of proposals that it believes will promote new uses of this band. A detailed summary of the Coalition Plan is attached as Appendix C. For example, it proposes establishing a new band plan to facilitate advanced low power two-way broadband systems while at the same time protecting existing high-power systems (*e.g.*, video operations). The core of its proposal segregates high-power and low-power systems into separate segments of the band to avoid mutual interference. The Coalition proposal divides the band into three major segments and three smaller segments. The three major segments would consist of the Lower Band Segment (LBS) with twelve 5.5-megahertz-wide channels extending from 2500-2566 MHz, the Mid Band Segment (MBS) with seven 6-megahertz wide channels extending from 2572-2614 MHz and the **Upper** Band Segment (UBS) with twelve 5.5-megahertz wide channels extending from 2620-2686 MHz.<sup>83</sup> Low powered operations would use the LBS and UBS while high power video operations would operate in the MBS. The three minor segments would consist of the I band at 2686-2690 (narrowband auxiliary channels) and two transition bands or guard bands (J and K), one located between the LBS and MBS and one located between the MBS and the UBS. The Coalition also proposes (1) eliminating unnecessary regulatory burdens imposed by site-by-site **licensing**,<sup>84</sup> (2) revising the technical rules to make them **less complex**,<sup>85</sup> (3) establishing a market-by-market mechanism for transitioning to the new band plan and (4) eliminating outdated regulations. On October 17, 2002, the Commission put the Coalition Proposal out on **Public Notice**.<sup>86</sup>

<sup>82</sup> See Letter from the Coalition to Thomas J. Sugrue, Chief, Wireless Telecommunications Bureau, Federal Communications Commission dated Oct. 7, 2002 (accompanied the Coalition Proposal).

<sup>83</sup> The Coalition does not fully explain why it narrowed the channels in the LBS and UBS to 5.5 megahertz. The Coalition explains that

[a]lthough the channels in the LBS and the UBS will be 5.5 MHz wide rather than 6 MHz wide and the channels in the Transition Band will be 1.5 MHz wide, no change in the current rules affording licensees the flexibility to subchannelize and superchannelize is proposed. Therefore, even after the transition licensees can continue to utilize 6 MHz channels in the LBS, the UBS, and the Transition Bands, provided that appropriate consents are achieved.

Coalition Proposal at 13, n.32

<sup>84</sup> For example, the Coalition contends that under the current licensing model, it will take substantially more applications to license a populated market for second generation MDS service (*e.g.*, low power, two-way broadband service). It estimates that it could take close to two thousand applications under the current licensing approach to fully license the band for a second generation system in just one major market. This licensing model, according to the Coalition, results in substantial transaction costs and delays of providing service. See Coalition Proposal at 7-8.

<sup>85</sup> For example, the Coalition argues that “an applicant is required by the complex ‘Appendix D’ interference-prediction methodology to assume in conducting analyses that each and every one of its subscribers is located at the very point most likely to cause interference to a neighbor. In other words, an applicant proposing to provide service on a given channel to 1000 subscribers simultaneously is required to assume that all 1000 subscribers will be at the very spot most likely to cause interference. Unfortunately, these hypothetical assumptions, for all practical purposes, preclude system operators from serving substantial portions of their authorized territories. See Coalition Proposal at 3.

<sup>86</sup> **MDS/ITFS Comment Public Notice**. Fifty-three entities filed comments and eight filed reply comments. A list of commenting parties is provided in Appendix D.

thirty-three 6-MHz channels on a combination of MDS and ITFS channels, which may be licensed to and leased from multiple entities; whereas digital stations can support 180 or more channels on the same amount of spectrum. The WCA informally has estimated that 120-130 MDS/ITFS systems are transmitting video programming to subscribing members of the public and that a few additional stations deliver video programming exclusively to educational reception sites or to cable television systems for retransmission.<sup>62</sup> Both WCA and a number of ITFS licensees have indicated that a majority of the licensees operating these high-power stations are actively exploring conversion to low-power, cellularized operations.<sup>63</sup>

25. The high powered fixed two-way systems each consist of one high-powered main transmitter, multiple return-path transmitters and, in some cases, one or more booster stations. This type of system is used primarily in rural areas where population densities are much lower than those in urban areas. By September, 2002, our Broadband Licensing System showed about eighty-seven operators are deploying data-only MDS or ITFS services in the U.S. We believe that many of these licensees are offering their services in conjunction with other local licensees through integrated systems. Thus, WCA representatives have estimated that there are thirty-to-forty markets in which data-only services are being marketed, and that all but perhaps five to eight of them are using high-power technology.

26. As discussed in further detail below, most MDS operators and a substantial proportion of ITFS operators would like to deploy low power, cellularized two-way systems, because they are more spectrally efficient than high-powered systems, can support provision of high-data-rate services to a large number of subscribers, can help overcome obstacles to line-of-sight service, and can more readily support mobile or portable services.<sup>64</sup> Our MDS/ITFS licensing database system cannot readily show how many of these systems are currently deployed, but we believe that interference issues have severely limited licensees' ability to deploy low power services. WCA estimates that low-power, cellularized MDS/ITFS data services are being offered in perhaps five-to-eight markets.

27. By the beginning of 2002, the potential number of homes with a serviceable line-of-sight to an MDS operator's transmission facilities was about sixty-two million. Yet, by the third quarter of 2002, the number of MDS subscribers had declined to approximately 490,000 from 700,000 a year earlier.<sup>65</sup> Recently, some entities began using this band to provide services other than a multi-channel video service (i.e., two-way broadband services). The Coalition reports that Sprint, for example, deployed two-way broadband services in fourteen cities over the course of a year beginning in March 2000, and was signing up about 2,000 customers per month before the company halted deployment to resolve technical problems that arose with the first generation of two-way technology.<sup>66</sup>

---

<sup>62</sup> In many cases, such systems use channels held by multiple licensees.

<sup>63</sup> See, e.g., Joint Comments of ITFS Parties, filed Nov. 14, 2002

<sup>64</sup> See sections III.C and III.D, below.

<sup>65</sup> BIA *Financial Network, The MMDS Industry: A Look Into the Industry's Most Significant Operators*, Sept. 2002, at 5.

<sup>66</sup> *Coalition Proposal* at 4. While operators have only begun to provide mobile data services on channels allocated to MDS and ITFS, a strong growth spurt in such services on other bands suggests that there is ample unsatisfied demand for mobile data. The number of wireless data users may have quintupled during 2001, to between eight and ten million subscribers. See Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions with Respect to Commercial Mobile (continued....)

### III. DISCUSSION

#### A. Broadband Policy Goals and Objectives

32. This proceeding provides **us** with another opportunity to help meet our statutory duty to “encourage the deployment **on** a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms). . . .”<sup>87</sup> This proceeding also provides us with the opportunity to further our goal to “establish regulatory policies that promote competition, innovation, and investment in broadband services and facilities while monitoring progress toward the deployment of broadband services in the United States and abroad.”<sup>88</sup> Broadband technologies, which encompass all evolving high-speed digital technologies that provide consumers integrated access to voice, high-speed data, video-on-demand, and interactive delivery services, are a fundamental component of the communications **revolution**.<sup>89</sup> Fully evolved broadband will virtually eliminate geographic distance as an obstacle to acquiring information and dramatically reduce the time it takes to access **information**.<sup>90</sup> We intend for this proceeding to accomplish the following objectives:

33. *Promote availability of broadband to all Americans, including broadband technologies for educators.* In recent years, the MDS industry has invested several billion dollars to develop broadband fixed wireless data systems in this band, including high-speed access to the Internet for residential customers, small and medium businesses, and educational institutions.” Such systems offer a significant opportunity to provide competition to cable and (Digital Subscriber Line) DSL services in the provision of broadband services in urban and rural areas. In this proceeding we are seeking comment on how best to configure the 2500-2690 MHz band to enable the development of broadband service in the 2500-2690 MHz band. Broadband technologies hold some promise not only for residential and business communities, but also for American students. The American classrooms are increasingly wired, but access to broadband technologies **is** still far from ubiquitous. With access to broadband technologies **our** students and teachers will have more powerful tools with which to learn. **ITFS** can and should play a role in making broadband more common in our students’ educational experience.

34. *Clarify and stabilize the regulatory treatment of similar spectrum-based services.* Broadband services should exist in an environment that eliminates regulations that deter investment and innovation and recognizes rules that promote competition and minimize harmful **interference**.<sup>92</sup> We note that broadband providers are delivering or planning to deliver broadband service over any combination of licensed spectrum, such as 700 MHz, cellular, broadband PCS, Part 101 millimeter wave, **MDS/ITFS**, and unlicensed spectrum, such as 902-928 MHz, 2.4 GHz, and **5 GHz**.<sup>93</sup> As stated above, we seek to stabilize the regulatory regime of the 2500-2690 MHz band by seeking comment **on** whether

---

<sup>87</sup> See Telecommunications Act of 1996, Pub. L. 104-104, § 706(a), 110 Stat. 56 (1996); 47 U.S.C. § 157

<sup>88</sup> See *Spectrum Policy Report*.

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> Coalition **Proposal** at ii. See also, *Interim Report* at ii

<sup>92</sup> High-Speed Access to the Internet Over Cable and Other Facilities, GN Docket No. 00-185, *Declaratory Ruling and Notice of Proposed Rulemaking*, 17 FCC Rcd 4798, 4802 ¶ 5 (2002) (*Declaratory Ruling*).

<sup>93</sup> License-Exempt Alliance Comments at 3 to *Spectrum Policy Report*.

SPAN, and open meetings of the Commission on analog ITFS and MDS channels.<sup>73</sup> Network for Instructional TV, Inc., and its affiliates distribute educational programming and services to students and teachers through a network of twenty-three ITFS stations and over the Internet.<sup>74</sup> The Illinois Institute of Technology uses seven of its eight ITFS channels to provide master's degree programs, certificate programs, and courses in engineering and the sciences, business and law.<sup>75</sup> Stanford University transmits hundreds of engineering and science courses each year to enrolled university students over five ITFS channels. It also provides for-credit course work to enrolled students at business sites throughout the Bay Area and non-credit instructional programming to several thousand more students.<sup>76</sup> The Commission's database as of November 6, 2000, showed that at least one ITFS station operates in most areas of the United States and that only in the least populated areas of the country is ITFS spectrum not currently occupied.<sup>77</sup> At that time, the database also showed that in 49 of the 50 largest metropolitan areas that all thirty-one ITFS/MDS channels are licensed within 100 miles of the cities considered."

#### E. The Coalition Proposal

30. On October 7, 2002, the Coalition submitted a paper entitled "A Proposal for Revising the MDS and ITFS Regulatory Regime" ("Coalition Proposal") concerning recommendations for changing the rules governing the 2500-2690 MHz band.<sup>79</sup> In general, the Coalition argues that the band is not being used to the extent possible" and that rule changes are necessary to allow new services to develop. The Coalition envisions this band being used to provide new wireless two-way broadband services (e.g., provide commercial service to portable, nomadic and mobile laptops, Personal Digital Assistants (PDAs) and other non-stationary devices) where the network architecture is based on a low power cellular concept. The Coalition contends that the explosive growth of 802.11b-compliant "hot spots" demonstrates that there is demand for this sort of service and that this band could be used to provide ubiquitous service, not just at hot spots. It points out that several MDS licensees are currently test marketing this new two-way broadband service." It asserts, however, that a "radical reworking of the

<sup>73</sup> F Corp. Informal Comments, dated Nov. 8, 2002 (Provide programming to more than 1,750 offices. government agencies, law firms, trade associations, schools and universities in more than 540 buildings throughout metropolitan Washington, D.C., Maryland, and Virginia.

<sup>74</sup> Network for Instructional TV, Inc. and North Carolina Assn. of Community College Presidents Comments, at 1 n.1, filed Nov. 14, 2002.

<sup>75</sup> Illinois Institute of Technology Comments, at 3, filed Nov. 21, 2002

<sup>76</sup> Stanford University Comments, at 1-2, filed Nov. 14, 2002.

<sup>77</sup> *Final Report: Spectrum Study of the 2500-2690 MHz Band - The Potential for Accommodating Third Generation Mobile Systems*, FCC Staff Report, March 30, 2001 at 34-35 (3G *Final Report*) (accessible on the Commission's web site at <http://libraunfoss.fcc.gov/edocs/public/attachmatch/DOC-211542A1.doc>).

<sup>78</sup> *Id.* at 32

<sup>79</sup> A detailed summary of the Coalition Plan is attached as Appendix C.

<sup>80</sup> For example, the Coalition contends that it has become clear that the growth of DBS and cable systems has "closed the window of opportunity for wireless cable" in all but a relatively few markets where wireless cable has gained a foothold. Coalition Proposal at 2. In regard to two-way services, the Coalition states because of problems associated with first generation two-way technology many in the industry have decided to halt deployment of additional first generation systems until those problems can be resolved. Coalition Proposal at 4.

<sup>81</sup> Coalition Proposal at 5-7.



produced a nationwide penetration rate of roughly forty-five percent.” Estimates of the number of mobile Internet users at the end of 2001 ranged from approximately eight to ten million, up from 2 to 2.5 million at the end of 2000.<sup>101</sup> In recent years, the **MDS** industry has invested several billion dollars to develop broadband fixed wireless data systems in this band, including high-speed access to the Internet for residential customers, **small** and medium businesses, and educational institutions.” Such systems offer a significant opportunity to provide competition to cable and Digital Subscriber Line (DSL) services in the provision of broadband services in urban and rural areas.

38. We are also cognizant that spectrum-based services can improve the ability of educators to serve America’s students. The Commission is committed to exploring ways in which these bands can be **used** to advance the public interest in broadband services for all Americans, and therefore reaffirms our goal of ensuring that educational and medical institutions continue to have access to spectrum. In this proceeding, we hope to grant educators additional rights to make it easier for them to use our national spectrum resource.

39. *Afford Greater Flexibility to Licensees.* When we allow increased flexibility in the use of radio spectrum, we allow market forces and educational needs to move spectrum to its highest valued use.<sup>103</sup> In doing so, however, we must carefully calibrate the extent of flexibility that is compatible with avoiding harmful interference. Thus, we endeavor to allow the maximum extent of flexibility possible that would not impair the rights of others to offer valued services in the band.

40. *Promote Increased Access to Spectrum.* Our rules do not allow profit-making entities to hold **ITFS** licenses, but they do allow commercial **MDS** operators to finance, build, operate, and obtain leased use of **ITFS** transmission facilities – and provide the vast majority of the programming carried over them.<sup>104</sup> We undertake this proceeding to determine whether there are rules that impede the full development of the 2500-2690 MHz band.

41. *Create regulatory policies that treat similar services similarly.* In these Services where **ITFS** and **MDS** licensees are subject to different regulations, although they offer similar services, we believe that regulatory parity will promote more efficient use of the spectrum allocated for each service. Consequently, we propose to consolidate the **ITFS** rules in Parts 73 and 74 and the **MDS** rules in Part 21 into Parts 27 or 101 to foster consistency among similar wireless services.

42. *Facilitate grouping similar spectrum uses.* One of the challenges presented in managing spectrum is to promote incentives for spectrum licensees to be “good neighbors,” *i.e.*, not cause harmful interference to adjacent systems. The Commission may accomplish this objective by creating an incentive for spectrum-based systems or devices to migrate to compatible bands based on marketplace forces. We note that the current configuration of the 2500-2690 MHz band in which high-power **ITFS** channels are interleaved with **MDS** channels, may inhibit the development of low power cellularized

<sup>100</sup> Federal Communications Commission, *Seventh Annual CMRS Competition Report* (FCC 02-179, rel. July 3, 2002) at 5.

<sup>101</sup> *Id.*

<sup>102</sup> Coalition Proposal at 4 *See also, 3G Final Report* at 13

<sup>103</sup> *See* FCC Staff Report, *Spectrum Policy Task Force Report in ET Docket No. 02-135*, released Nov. 2002 (*Spectrum Policy Report*).

<sup>104</sup> 47 C.F.R. § 74.931

## Coalition Band Plan

Channel Designation	Lower F	Upper F		
A1	2505.5000	2511.0000	LOW POWER	Channels can be used for TDD or Upstream FDD
A2	2511.0000	2516.5000		
A3	2516.5000	2522.0000		
B1	2522.0000	2527.5000		
B2	2527.5000	2533.0000		
B3	2533.0000	2538.5000		
C1	2538.5000	2544.0000		
c2	2544.0000	2549.5000		
D1	2549.5000	2555.0000		
D2	2555.0000	2560.5000		
D3	2560.5000	2566.0000		
	2566.0000	2572.0000		Guard Band
A4	2572.0000	2578.0000	HIGH W	Channels can be used for high-power operations like existing ITFS TV.
	2578.0000	2584.0000		
	2584.0000	2590.0000		
	2590.0000	2596.0000		
E4	2596.0000	2602.0000		
F4	2602.0000	2608.0000		
G4	2608.0000	2614.0000		
K	2614.0000	2620.0000		Guard Band
E1	2620.0000	2625.5000	LOW POWER	Channels can be used for TDD or Downstream FDD
E2	2625.5000	2631.0000		
E3	2631.0000	2636.5000		
F1	2636.5000	2642.0000		
F2	2642.0000	2647.5000		
F3	2647.5000	2653.0000		
H1	2653.0000	2658.5000		
H2	2658.5000	2664.0000		
H3	2664.0000	2669.5000		
G1	2669.5000	2675.0000		
G2	2675.0000	2680.5000		
G3	2680.5000	2686.0000		
I	2686.0000	2690.0000		

eligibility criteria to include commercial entities, and we address the possibility of merging **MDS** and **ITFS** into a single Broadband Communications Service. We also seek comment on establishing specific deadlines for completion of the transition process, and we inquire whether we should establish a timetable for conversion of the entire 2500-2690 MHz band to low-power operations compatible with two-way, broadband cellular services. We do not propose to reclaim licenses from any incumbent operators that have complied with our existing rules and continue to comply with our rules when we change them or adopt new ones

#### D. Changes to 2500-2690 MHz Band Plan

##### 1. Background

47. ITFS and all but two of the **MDS** channels are located in the 2500 – 2690 MHz band. As shown in the chart below, ITFS currently has twenty 6-MHz channels, while **MDS** has eleven 6-MHz channels in the 2500 – 2690 MHz band. The channels are usually licensed in groups of four, but the channels in each group are not contiguous. The chart below depicts the arrangement. This band plan was designed primarily to promote wireless cable and educational television services. When ITFS was created, ITFS reception equipment could not receive adjacent channels without interference.<sup>109</sup> Thus, the Commission interleaved the A block channels with the B block channels, the C block channels with the D block channels, the E block channels with the F block channels and the G block channels with the H block channels.

48. This channelization framework was appropriate for first generation technology when the Commission created ITFS and **MDS**, but is not optimal for digital two-way services. The Coalition notes that the existing band plan – which provides licensees with multiple interleaved 6 MHz channels rather than contiguous spectrum – was established in the early 1960s when television technology precluded the use of adjacent channels, and has remained essentially unchanged since that time.” The Coalition asserts that

<sup>109</sup> Coalition Proposal at 1

<sup>110</sup> Id., *citing* Amendment of Parts 2 and 74 of the Commission’s Rules and Regulations to Establish a New Class of Educational Television Station of the Transmission of Instructional and Cultural Material to Multiple Receiving Locations on Channels in the 1990-2110 Mc/S or 2500-2690 Mc/S Frequency Band, FCC 63-722 (rel. July 30, 1963), on *recon.* 2 Rad. Reg.2d 1619 (P&F 1964); Amendment of Sec. 74.902 of the Rules Governing Instructional Television Fixed Stations to Assign Alternate Channels to Stations Operating in the Same Area Instead of Every Sixth Channel, 2 Rad. Reg.2d 1615(P&F 1964).

Existing MDS/ITFS Band Plan			
Existing Channel Designation	Lower Frequency	Upper Frequency	
A1	2500.0000	2506.0000	ITFS
B1	2506.0000	2512.0000	
A2	2512.0000	2518.0000	
B2	2518.0000	2524.0000	
A3	2524.0000	2530.0000	
B3	2530.0000	2536.0000	
A4	2536.0000	2542.0000	
B4	2542.0000	2548.0000	
C1	2548.0000	2554.0000	
D1	2554.0000	2560.0000	
C2	2560.0000	2566.0000	
D2	2566.0000	2572.0000	
C3	2572.0000	2578.0000	
D3	2578.0000	2584.0000	
C4	2584.0000	2590.0000	
D4	2590.0000	2596.0000	
E1	2596.0000	2602.0000	MDS
F1	2602.0000	2608.0000	
E2	2608.0000	2614.0000	
F2	2614.0000	2620.0000	
E3	2620.0000	2626.0000	
F3	2626.0000	2632.0000	
E4	2632.0000	2638.0000	
F4	2638.0000	2644.0000	
G1	2644.0000	2650.0000	ITFS
H1	2650.0000	2656.0000	
G2	2656.0000	2662.0000	
H2	2662.0000	2668.0000	
G3	2668.0000	2674.0000	ITFS
H3	2674.0000	2680.0000	MDS
G4	2680.0000	2688.0000	ITFS
I1-I31	2686.0000	2689.8750	MDS/ITFS OFS

consolidating the Services in Part 101 of the Commission's Rules to provide regulatory parity for similar wireless services will advance the public interest in more ubiquitous availability of broadband, particularly for educational, telemedicine, and medical purposes.

35. Facilitate development of possible alternative broadband residential facilities-based providers. In the Declaratory Ruling, the Commission noted that "[t]hroughout the brief history of the residential broadband business, cable modem service has been the most widely subscribed to technology, with industry analysts estimating that approximately 68% of residential broadband subscribers today use cable modem service . . . 29% of residential broadband subscribers use DSL service, and about 3% of subscribers use various radio-based technologies."<sup>94</sup> As we noted above, wireless broadband service in the 2500-2690 MHz band may offer consumers another broadband alternative, which may lead to reduced prices and more competition in the delivery of high-speed internet access.<sup>95</sup> We believe that the changes that we are proposing to make in this proceeding, streamlining the application process, implementing geographic area licensing, modifying technical rules, and proposing rules to allow mobile operation in the 2500-2690 MHz band will enable the flexible use of the spectrum. These changes will allow for the operation of market forces, which in turn, may stimulate the development of wireless broadband services; thus giving consumers more choice in broadband providers.

## B. Spectrum Policy Goals and Objectives

36. Pursuant to the Communications Act, a benchmark of national communications policy is to encourage the provision of new technologies and services to the public." Based on the evolution of the Services and recent trends in consumer demand, this proceeding provides us with an opportunity to further our spectrum management goal to "encourage the highest and best use of spectrum domestically and internationally in order to encourage the growth and rapid deployment of innovative and efficient communications technologies and services."<sup>97</sup> The promise of emerging technologies could mean ubiquitous, mobile broadband connections.<sup>98</sup> We believe that it is necessary for us to take certain actions, as described in further detail below, to foster the continued development and deployment of the Services by encouraging licensees in the 2500-2690 MHz band to migrate to more technologically and economically efficient uses of the spectrum. We believe that providing these licensees with additional flexibility of use would serve the public interest and allow licensees to provide new and innovative services, consistent with the requirements of Section 303(y) of the Communications Act.<sup>99</sup> Moreover, we believe that our proposals address the strong desire for a revamping of the services as expressed by representatives of the MDS and ITFS communities. In this connection, we intend for this proceeding to accomplish the following spectrum management objectives:

31. Meet Increasing Demand for Spectrum-Based Services, In recent years, we have seen strong demand for mobile telephone and mobile data services. In 2001, the mobile telephony sector generated more than \$65 billion in revenues, increased subscribership from 109.5 million to 128.5 million, and

<sup>94</sup> Declaratory Ruling, 17 FCC Rcd at 4803-4804 ¶ 9.

<sup>95</sup> See para. 33, *supra*.

<sup>96</sup> See 47 U.S.C. §§ 157(a). See also 47 U.S.C. § 309(j)(4)(C)(iii).

<sup>97</sup> Federal Communications Commission, Strategic Plan FY 2003-FY 2008 at 5 (2002) (Strategic Plan).

<sup>98</sup> *Id.* at 14.

<sup>99</sup> 47 U.S.C. § 303(y).

passive band at **2690-2700 MHz** band. We seek comment on this **alternative**.<sup>115</sup>

**52.** The *3G Final Report* discusses two other types of band segmentation plans.<sup>116</sup> Under the first type of band plan, there would be alternating bands for low power services and high power services, respectively, with guard bands in between the two **45** megahertz frequency blocks for low power services. The chart below is a pictorial representation of such a band plan:

Low Power Operations	Guard Band	High Power Operations	Guard Band	Low Power Operations	Guard Band	High Power Operations
----------------------	------------	-----------------------	------------	----------------------	------------	-----------------------

Low Power Operations	Guard Band	High Power Operations
----------------------	------------	-----------------------

Such a band plan would provide a large block of contiguous spectrum for both types of operations. As noted in the *3G Final Report*, such a band plan would be particularly well suited to TDD technology.”

**54.** We seek comment on various band plans or other plans that would separate the band into high power and low power operations. Commenters should address such issues as (1) the appropriate channelization plan, (2) the justification for and appropriate size of any guard bands, and what types operations could be permitted in such bands, (3) whether tighter out-of-band emission limitations could serve as an alternative to guard hands; (4) whether, and under what circumstances, licensees may disaggregate or aggregate channels, (5) any special rules to apply in a particular band segment or channel, (6) whether every market requires a uniform band plan, or whether different band plans would be appropriate for different markets, and (7) whether any plan is inconsistent with the educational mission of ITFS or fails to recognize the unusual challenges faced by nonprofit educational institutions. With regard to the latter concern, we note that **our** Spectrum Policy Report raises the possibility of allowing licensees in uncongested rural areas to operate at higher power levels, provided they do not thereby generate unacceptable interference in urban areas.<sup>118</sup>

<sup>115</sup> We also seek comment on amending the Table of Allocations to adopt a **US** footnote listing the radio observatories that use **2655-2690 MHz** on a secondary basis and **2690-2700 MHz** on a primary basis.

<sup>116</sup> *3G Final Report* at 37-57.

<sup>117</sup> *Id.* at 42

<sup>118</sup> *Spectrum Policy Report* at 58-60.

broadband uses of the MDS channels. Thus, in this proceeding we are seeking comment on reconfiguring the 2500-2690 MHz band to separate low power **uses** from high power uses and thereby promote the most efficient use of the 2500-2690 MHz band.

**43. *Conduct effective and timely licensing activities that encourage efficient use of the spectrum.***

To ensure that licensing of the 2500-2690 MHz band occurs in a rapid, routine, and ordinary manner, we propose to greatly streamline the application process for the Services, including migrating licensees to the ULS. **Also**, we are proposing other licensing approaches, such as licensing by geographic area, that will give licensees increased flexibility while greatly reducing the administrative burdens on both licensees and the Commission.

**C. Problems with the Existing MDS/ITFS Rules**

44. The Coalition has identified some of the problems with the existing MDS and **ITFS** rules. The Coalition Plan focuses primarily on engineering issues – accommodating the needs of two incompatible types of users that presently share a single band: one-way, relatively high-powered stations and operators that seek to maximize spectral efficiency by deploying low-powered cellular systems. The Coalition also identifies certain areas where the Commission could act to reduce administrative burdens on licensees and make the MDS/ITFS licensing process more efficient. **In** addition, the Coalition proposes ways to eliminate unnecessary paperwork requirements that would otherwise impose a near-impossible burden on low-power operators.

45. Both the Coalition's perception of the problems and its proposed solutions are broadly consistent with the conclusions reached in a major report our staff completed in 2001, the *3G Final Report*.<sup>105</sup> The most important conclusion reached in the *3G Final Report* is that traditional MDS/ITFS stations and third generation cellular systems are not compatible with each other when they are operating on the same frequencies. Their service area borders must be separated by distances exceeding 100 miles to ensure that MDS/ITFS transmitters will not cause harmful interference to Third Generation (3G) receivers.<sup>106</sup> Moreover, the report concludes that existing MDS/ITFS systems preclude operation of 3G systems in forty-nine of the fifty largest cities in the U.S., because all thirty-one of the MDS and ITFS channels in the 2500-2690 MHz band are licensed within 100 miles of those forty-nine cities.<sup>107</sup> The authors of the *3G Final Report* recognize that it would be infeasible to move the incumbent licensees to a different band. Instead, they recommend segmenting the band into separate high- and low-power segments and requiring both incumbents and new applicants to conform with the new technical rules.<sup>108</sup> While the *3G Final Report* focuses on one particular type of new technology, its conclusions may apply with respect to any low-powered two-way service that seeks to achieve spectral efficiencies through a cellular-style configuration.

46. **As** discussed below, we believe that the Coalition's proposals are a major step forward as we examine this band. However, we believe that significant progress will also require a discussion of ownership and eligibility issues, transition timetables, and, perhaps, a more thorough resolution of engineering issues as well. Specifically, we seek comment on the possibility of expanding the ITFS

---

<sup>105</sup> The definition of "3G" is discussed at note 47, *supra*

<sup>106</sup> *Id.* at 31

<sup>107</sup> *Id.* at 32.

<sup>108</sup> *Id.* at 40-41

an auction.<sup>122</sup>

59. The Coalition recommends that operation on the response (R) channels be secondary to operation on the LBS, MBS, and UBS channels. In other words, they would have us provide that operation on the response channels must not cause harmful interference to operations on the LBS, MBS, and UBS channels and the R channel licensee must accept any interference caused by an LBS, MBS, or UBS licensee operating in accordance with our Rules. The MMDS Licensee Coalition opposes this recommendation and states that response channels should receive equal status.<sup>123</sup> We seek comment on this issue.

#### 4. Utilization of Unassigned ITFS Spectrum

60. Under our rules, MDS and ITFS licensees and applicants must apply to license each transmitter site in the area they wish to serve (*i.e.*, site-based licensing).<sup>124</sup> In addition, we license MDS BTA channels on a geographic area basis.<sup>125</sup> The Coalition argues that elimination of site-by-site licensing and adoption of a geographic area-licensing concept for low-power operations will promote deployment of advanced low-power systems because a site-by-site licensing system is cumbersome and the transaction costs are too high to permit competitive businesses to flourish using next generation technology.<sup>126</sup> The Coalition contends, however, that a site-by-site licensing approach will continue to be necessary for high-powered, one-way operations, though they state that such operations could benefit from a streamlined site-by-site licensing approach.”

61. In general, there are two types of flexible, market-oriented approaches to spectrum allocation – the “exclusive use” model, and the “commons” model.<sup>128</sup> Under the “exclusive use” model, “a licensee has exclusive and transferable rights to the use of specified spectrum within a defined geographic area, with flexible use rights that are governed primarily by technical rules to protect spectrum users against interference.”” Under the commons model, spectrum is available to all users that comply with established technical “etiquettes” or standards that set power limits and other criteria for potential operation of unlicensed devices to mitigate potential interference.<sup>130</sup> These models suggest two types of approaches for allowing use of the unassigned ITFS spectrum – geographic area licensing and unlicensed operation pursuant to Part 15 of the Commission’s Rules on a primary basis. We seek comment on whether one or the other of these models is the best means of ensuring the maximum and efficient use of the ITFS spectrum.

<sup>122</sup> See para. 22, *supra*.

<sup>123</sup> MMDS Licensee Coalition Comments at 8

<sup>124</sup> See 47 C.F.R. §§ 74.910, 74.911.

<sup>125</sup> See *MDS Auction Report and Order*, 10 FCC Rcd 9607

<sup>126</sup> See Coalition Proposal at 19.

<sup>127</sup> *Id.*

<sup>128</sup> *Spectrum Policy Report* at 35.

<sup>129</sup> *Id.*

<sup>130</sup> *Id.*

Lower Band (LBS)	J Band	Middle Band (MBS)	K Band	Upper Band (UBS)	I Band
------------------	--------	----------------------	--------	------------------	--------

51. The Coalition proposes that the **LBS** be designated as the mobile station transmit band and that the UBS be designated as the base station transmit band. Such a designation would protect the

---

<sup>111</sup> Coalition Proposal at 9

<sup>112</sup> *Id.*

<sup>113</sup> *Id.* at 10.

<sup>114</sup> The service provider would not necessarily know, **and** might not need to know, whether a new subscriber was seeking to obtain mobile or fixed two-way data service. **A** laptop computer might be fixed part of the time and mobile at other times.



and SMR licensees.””

64. We also seek comment on the possible disadvantages of licensing unassigned ITFS spectrum on a geographic area basis. Would geographic area licensing make it more difficult for educational institutions and nonprofit educational organizations to obtain access to spectrum? Would licensing ITFS spectrum on a geographic area basis result in the underutilization of spectrum because ITFS users are interested in operating in small, discrete areas?

65. If we decide to license unassigned ITFS spectrum via a geographic area overlay license, we must address three issues: what geographic areas to use for licenses, how much bandwidth should be associated with each license, and how to address interference issues near international borders. We address each of these issues below.

(i) Geographic Areas for Licenses

66. Assuming that we use a **GSA** approach to license this band, we must determine the appropriate size(s) of service areas on which licenses should be based. Traditionally, in establishing a service the Commission attempts to adopt optimal spectrum block size(s) and optimal **GSAs**, while at the same time allowing parties to aggregate initial licenses and then adjust their licenses through secondary market mechanisms such as partitioning and disaggregation, if such fine-tuning is necessary

67. Ideally, the size(s) of the initial **GSAs** would match the business plans of the initial licensees. Our approach to determining optimum size(s) attempts to accommodate the likely range of applicant desires by balancing efficiency with the policy goal of disseminating licenses among a wide variety of applicants.<sup>135</sup> We also wish to foster service to rural **areas**<sup>136</sup> and tribal lands, and to promote investment in and rapid deployment of new technologies and services.”” Large license areas may be preferred by incumbent providers to facilitate build-out of existing large-area systems. Large license areas also provide carriers with greater flexibility in the build-out of their services, since they are less constrained by geographical license limits and entail coordination with fewer adjacent service providers. In this regard, we seek comment on whether any problems associated with the operations of other service providers may be better addressed by licensing this spectrum in larger areas where there may be less of a need for complicated protection agreements. On the other hand, **small** license areas may favor smaller entities with regional business plans and no interest in providing large-area service. Rural and smaller carriers may prefer licensing based on small geographic **areas**.<sup>138</sup>

68. We note that our simultaneous multiple round and combinatorial (or “package”) auction designs generally may offer bidders the opportunity to aggregate smaller regional licenses to cover larger

<sup>134</sup> See Part 20 (Commercial Mobile Radio Services), Part 22 (Public Mobile Services), Part 24 (Personal Communications Services), Part 26 (General Wireless Communications Service), Part 27 (Miscellaneous Wireless Communications Services), and Part 90 (Private Land Mobile Radio Services) of our rules.

<sup>135</sup> See 47 U.S.C. § 309(j)(3)(B), (4)(C).

<sup>136</sup> See 47 U.S.C. § 309(j)(3)(A).

<sup>137</sup> See 47 U.S.C. § 309(j)(4)(C)(iii).

<sup>138</sup> See, e.g., Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission’s Rules, WT Docket No. 99-168, *First Report and Order*, 15 FCC Rcd 476,499 ¶ 55 (2000) (*Upper 700MHz First Report and Order*).

55. The other basic approach would be to avoid any segmentation of the band by applying an across-the-board limit on signal strengths sufficient to accommodate low power cellularized operations on all channels throughout the 2500-2690 MHz band. The Coalition Plan, or any other band segmentation plan, would require extensive, mandatory re-shuffling of channel assignments to avoid leaving high power channels adjacent to low power channels, to avoid adjacent channel interference.<sup>119</sup> By contrast, applying an across-the-board limitation on signal strengths could make de-interleaving a less urgent necessity and, perhaps, make it possible for acquisitions, channel trades, and other voluntary market processes to effectuate any needed consolidation of channels. We seek comment on the extent to which such a rule would reduce the need to apply mandatory channel reassignments or whether it would interfere with future uses of this spectrum by educators.

56. If we were to adopt an across-the-board reduction in signal strengths, we anticipate that we would adopt a transition period during which existing high power operations could continue to operate. At the end of the transition period, absent an agreement with affected licensees, we would require high power licensees to comply with new interference protection criteria. Alternative mechanisms for encouraging or requiring transitions to a new band plan are discussed in section III(D)(5), below. To the extent that parties file comments on these issues, we ask them to discuss the differing considerations that might apply depending upon whether we adopt a high-power/low-power band segmentation plan or an across-the-board reduction in power levels that would not require segmentation of the band.

57. From a broader perspective, we note that Coalition members appear to believe that the predominant future use of this band will be low power mobile services. On that basis, we seek comment on whether it will be necessary to reserve a portion of this band in the long term to accommodate high power services. We particularly seek comment from licensees who are currently engaging in high power operations as to their plans for the spectrum. We seek comment on the technical feasibility and cost involved in complying with technical rules that may require licensees to lower substantially their signal strength outside their protected service areas. Based upon all of those considerations, we inquire whether a uniform reduction in power levels throughout the 2500-2690 MHz band would be warranted. We inquire to what extent such a plan would disrupt existing high-powered operations, and to what extent it would produce offsetting advantages by making more channels available for low-power operations.

### 3. Response Channels

58. In 1991, we allocated the seven 125 kHz response channels (part of the R channels under the Coalition band plan) associated with MDS channels E3, E4, F3, F4, H1, H2, and H3 to the POFS.<sup>120</sup> The Coalition proposes to return these channels for MDS use.<sup>121</sup> We believe the proposal has merit because, as the Coalition notes, there are no OFS licensees currently on these channels, probably because they are too narrow to be usable by themselves. We ask for comment on this proposal. We also seek comment on how to assign this spectrum, if reallocated. For example, should we automatically give the channels to the geographic area licensee of the corresponding 6-megahertz main channel? The Coalition favors this approach. Another option would be to license the channels on a geographic area basis and allow any eligible entity to apply for these channels. If we received mutually exclusive applications, we would hold

---

<sup>119</sup> We address the complex transitional issues implicated by that process in section III.D.6.

<sup>120</sup> *MDS Second R&O*, 6 FCC Rcd at 6795.

<sup>121</sup> Coalition Proposal at 12, n.30

Number of Licenses	Description of areas	Examples
1	Nationwide	Narrowband PCS <sup>141</sup> , 1.6 GHz band <sup>142</sup>
5	Narrowband PCS Regional	Narrowband PCS <sup>143</sup>
6	Economic Area Groupings (EAG)	220 MHz, <sup>144</sup> Blocks A/B/D/E, Lower 700 MHz <sup>145</sup>
12	Regional Economic Area Groupings (REAG)	Wireless Communication Service (WCS) <sup>146</sup>
51	(see note below)	A & B-Block PCS <sup>147</sup>
51 or 52	Major Economic Areas (MEA)	WCS, <sup>148</sup> 929/931 MHz Paging <sup>149</sup>
175	Economic Areas (EA)	220 MHz, <sup>150</sup> 800 MHz SMR, <sup>151</sup> Paging, <sup>152</sup> Multiple Address Systems <sup>153</sup>
493	(see note below)	C/D/E/F-Block PCS <sup>154</sup>
734	306 Metropolitan Statistical Areas (MSA) plus 428 Rural Service Areas (RSA)	Cellular, <sup>155</sup> Block C, Lower 700 MHz <sup>156</sup>

<sup>141</sup> See 47 C.F.R. § 24.102(a)

<sup>142</sup> See 47 C.F.R. § 27.6(f).

<sup>143</sup> See 47 C.F.R. § 24.102(b).

<sup>144</sup> See 47 C.F.R. §§ 90.7, 90.761(b)

<sup>145</sup> See 47 C.F.R. § 27.6(c)(1)

<sup>146</sup> See 47 C.F.R. § 27.6(a).

<sup>147</sup> See 47 C.F.R. § 24.202(a). These fifty-one areas were used under licenses issued by Rand McNally & Company for certain specific radio services, not including AWS, and are therefore not available for consideration in this proceeding. See Copyright Liabilities, Public Notice, 11 FCC Rcd 22,429 (MMB 1996).

<sup>148</sup> See 47 C.F.R. § 27.6(a). WCS MEA number 52 consists of the Gulf of Mexico.

<sup>149</sup> See 47 C.F.R. § 22.503(b)(2), (3). The fifty-one paging MEAs do not include the Gulf of Mexico

<sup>150</sup> See 47 C.F.R. §§ 90.7, 90.761(a).

<sup>151</sup> See 47 C.F.R. §§ 90.7, 90.681.

<sup>152</sup> See 47 C.F.R. § 22.503(b)(2), (3).

<sup>153</sup> See 47 C.F.R. § 101.1315.

<sup>154</sup> See 47 C.F.R. § 24.202(b). These 493 areas were used under licenses issued by Rand McNally & Company for certain specific radio services, not including AWS. See Copyright Liabilities, Public Notice, 11 FCC Rcd 22,429 (MMB 1996).

<sup>155</sup> See 47 C.F.R. § 22.909.

<sup>156</sup> See 47 C.F.R. § 27.6(c)(2)

a. Geographic Area Licensing of Unassigned ITFS Spectrum

**62.** One means of seeking to increase the intensity and efficiency of use of the **ITFS** spectrum would be to license the unassigned **ITFS** spectrum using geographic area licensing. In other bands where we contemplated allowing the development of mobile or other wide-area services, we concluded that licensing based on predefined service areas (*e.g.*, geographic area licensing) poses significant advantages over site-based licensing because of the greater operational flexibility it gives licensees and the greater ease of administration for consumers, licensees, and regulators.<sup>131</sup> For example, geographic area licensing reduces administrative burdens and operating costs by allowing licensees to modify, move, and add to their facilities within specified geographic areas without prior Commission approval.<sup>132</sup> Our experience has been that wide-area licensing (as opposed to site-by-site licensing) affords licensees substantial flexibility to respond to market demand and may result in significant improvements in spectrum utilization.<sup>133</sup> In particular, geographic area licensing allows licensees to coordinate usage across an entire geographic area to maximize the use of spectrum in areas of highest demand. Geographic area licenses also provide licensees the flexibility to adjust spectrum usage depending upon market demands. Such adjustments may be significantly more difficult under a site-by-site licensing regime where prior Commission approval is needed before a licensee can address growth or changes in demand.

**63.** The facts that both **ITFS** and **MDS** channels in the same communications system and that many **MDS** licensees already have geographic area licenses may provide an additional reason for providing **ITFS** operators with geographic area licenses as well. We seek comment on whether both the public and the Commission would benefit from a consistent licensing approach across the entire band. We note that this licensing approach is consistent with the operational flexibility we have afforded other entities that use spectrum to provide services such as 24 GHz, 39 GHz, PCS, 700 MHz commercial band

<sup>131</sup> Implementation of Sections 309(j) and 337 of the Communications Act: Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies and Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz, *Notice of Proposed Rulemaking*, 14 FCC Rcd 5206, 5238 ¶ 63 (1999); Amendment of Parts 2, 15, and 97 of the Commission's Rules to Permit Use of Radio Frequencies Above 40 GHz for New Radio Applications, *Second Report and Order*, 12 FCC Rcd 10,571, 10,599 ¶ 63 (1997); Revised Competitive Bidding Authority to Implement Sections 309(j) and 337 of the Communications Act of 1934, as Amended by the Balanced Budget Act of 1997, 64 Fed. Reg. 23571-01 (1999).

<sup>132</sup> See Implementation of Sections 3(n) and 332 of the Communications Act and Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of *SMR* Systems in the 800 MHz Frequency Band, *Third Report and Order*, PR Docket Nos. 89-553, 93-144, GN Docket No. 93-252, 9 FCC Rcd 7988, 8044. See also, Amendment of the Commission's Rules Regarding Multiple Address Systems, WT Docket No. 97-81, *Report and Order*, 15 FCC Rcd 11956 (2000). See also, Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), *Report and Order*, 17 FCC Rcd 1,022 (2002) (*Lower 700 MHz Band R&O*).

<sup>133</sup> See, *e.g.*, Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of *SMR* Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, *First Report and Order*, *Eighth Report and Order*, and *Second Further Notice of Proposed Rule Making*, 11 FCC Rcd 1463 (1995) (restructuring licensing framework for 800 MHz Specialized Mobile Radio Service and adopting wide-area licensing). See also Gregory L. Rosston & Jeffrey S. Steinberg, *Using Market-Based Spectrum Policy to Promote the Public Interest*, 50 Fed. Comm. L.J. 87, 94 (1997).

agreements with Rand McNally to use Rand McNally's copyright MTA/BTA listings and **maps**.<sup>158</sup> These agreements authorize the conditional use of Rand McNally's copyright material by Commission MDS licensees and requires interested persons using this material to include a legend on reproductions indicating Rand McNally's ownership, and provides for payment of a one time license fee to Rand McNally.<sup>159</sup> Under the terms of the WCA license agreement, license fees are to be paid within ten business days after the date that MDS BTA authorization(s) are issued by the Commission.

76. These agreements do not explicitly address ITFS channels that the Commission does not license as a result of the *MDS Auction R&O*.<sup>160</sup> Thus, if we select Rand McNally's BTAs as the service definition for ITFS geographic area licenses, a question arises as to whether an ITFS licensee would have to obtain a copyright license (either through a blanket license agreement or some other agreement) from Rand McNally.<sup>161</sup> We are concerned that an ITFS geographic area licensee might not be able to rely on the grant of a BTA-based authorization from the Commission as a defense against any claim of copyright infringement brought by Rand McNally against such grantee. Accordingly, we seek comment on whether BTAs are appropriate for ITFS.

### (ii) Bandwidth for Licenses

77. We also seek comment on the appropriate size of the spectrum block or blocks to assign to ITFS geographic area licensees. The individual channels for MDS and ITFS spectrum in the 2500-2690 MHz band are six megahertz wide. One option would be to issue a single geographic area license for all unencumbered ITFS spectrum in a given market, region, or nationwide. In the case of MDS, the Commission awarded a single BTA license covering all unencumbered MDS channels.<sup>162</sup> A second option would be to issue separate licenses for each individual channel. A third option would be to divide the band into 24 MHz blocks, based upon the fact that many licensees are licensed for blocks of four six MHz channels. In reaching our determination, our intent is to maximize licensee flexibility, provide ITFS geographic area licensees with the spectrum they need to offer technologically advanced and innovative services, and ensure the most efficient utilization of the spectrum.

### (iii) International Border Issues

78. In the Canadian and Mexican border areas, availability of this band may be restricted by a border agreement or treaty.<sup>163</sup> As a result, certain segments of the band may not be available in border

<sup>158</sup> See Letter from P. Sinderbrand to W. Caton, Acting Secretary, FCC, Jan. 11, 1996. The Commission incorporated the WCA/Rand McNally agreement by reference in § 2(a)(iii), dated November 29, 2000. On September 18, 1995, Rand McNally reached an agreement with the WCA for a blanket copyright license for the conditional use of the copyrighted material in MDS.

<sup>159</sup> Mass Media Bureau Reminds Licensees that Issuance of a BTA Authorization Triggers Copyright Responsibilities, *Public Notice*, 11 FCC Rcd 22,429 (1996) (*BTA PN*).

<sup>160</sup> See *MDS Auction R&O*, 10 FCC Rcd at 9608.

<sup>161</sup> See, e.g., Revision of Part 22 and 90 of the Commission's Rules to Facilitate Future Development of Paging Systems, *Second Report and Order and Further Notice of Proposed Rulemaking*, 12 FCC Rcd 2732, 2735 n.3 (1997); *ETA PN*, 11 FCC Rcd at 22,429.

<sup>162</sup> *MDS Auction R&O*, 10 FCC Rcd 9589

<sup>163</sup> See e.g., Interim Arrangement Concerning the Use of the Frequency Bands 2150 – 2162 MHz and 2500 – 2690 MHz by MCS and MDS Stations Near the Canada/United States of America Border (dated Jun. 25.2002).

geographic areas, to aggregate smaller spectrum blocks, and to pair unpaired spectrum.<sup>139</sup> Such aggregation at auction of smaller spectrum blocks and licenses may provide bidders with greater flexibility to implement their business plans, as compared with the traditional approach of defining optimal size. Thus, in discussing the issues of spectrum block size, geographic area, and pairing of spectrum, commenters are requested to take into consideration the various available auction designs. For example, if a commenter advocates a nationwide geographic area license, the commenter may also wish to comment on whether the auction of smaller licenses would allow bidders to aggregate licenses to create a nationwide footprint. Commenters should also discuss whether a particular band plan serves the Commission's spectrum management goals, including flexible and efficient spectrum use.<sup>140</sup> We are also aware that some licensees may need smaller service areas, since the most desirable or efficient scale of service area may vary according to the business plan of the potential licensee, in light of the variety of potential services that we envision will use these bands, including emerging technologies or next-generation applications. Thus, in discussing these issues, commenters should also take into consideration the possibility that we would permit post-auction partitioning of licenses for bidders whose business plans require different size geographic areas than we ultimately adopt.

69. In the past the Commission has licensed spectrum using a wide variety of **GSAs**, including nationwide licensing, regional licensing, local licensing, or some combination of these approaches:

---

<sup>139</sup> Package bidding may take many forms. Under the design that the Wireless Telecommunications Bureau developed for the 700 MHz band auction (Auction No. 31), bidders were not restricted to placing bids on individual licenses, but were allowed to place all-or-nothing bids on packages of licenses. Auction of Licenses in the 747-762 and 777-792 MHz Bands Scheduled for September 6, 2000; Procedures Implementing Package Bidding For Auction No. 31, *Public Notice*, 15 FCC Rcd 11.526 (2000) (describing package bidding procedures); *see also* Auction of Licenses on the 747-762 and 777-792 MHz Bands Scheduled for June 19, 2002, Round Results Process and Results Replication, *Public Notice*, 17 FCC Rcd 8.128 (2002). Under this approach, for example, a bidder desiring to inaugurate a nationwide service could bid on a package of licenses that covers the entire nation, and not face the risk of winning only some of the desired licenses and paying more than the bidder values those licenses by themselves (without the other licenses needed to provide nationwide coverage).

<sup>140</sup> *See* 47 U.S.C. § 309(j)(3)(D).

82. We therefore seek comment on the advantages and disadvantages of allowing unlicensed technologies to operate in current white space in the **ITFS** spectrum, and where **ITFS** licenses are returned to the Commission, on a primary basis. Would allowing unlicensed use of the **ITFS** spectrum on a primary basis provide educators with a useful new tool? Is it possible to allow unlicensed operation without *undermining* current **ITFS** operations (including educational, telemedicine or medical uses)? If so, what rules and technical requirements would be necessary to ensure sufficient interference protection to existing, licensed **ITFS** facilities? Should any antenna requirements be imposed? What would be the appropriate power and/or field strength limits for unlicensed transmitters operating on such a basis? Could **GPS** or other location techniques be incorporated into an unlicensed device so it could determine its precise location and identify licensed users in its vicinity by accessing a database? Would such an approach be reliable, and could it be combined with other methods to prevent interference to licensed services? If we ultimately revise the band plan for the 2500-2690 MHz band, particularly in a fashion segmenting low power and high power operations, is unlicensed use preferable in one portion but not the other?

## 5. Geographic Area Licensing for Current Licensees

### a. Geographic Area Licensing for MDS BTA Authorization Holders

83. Under the current rules, qualified auction winners were granted licenses for BTAs. A BTA authorization holder may provide service within its BTA, excluding the **PSA** of incumbent stations and previously proposed **MDS** and **ITFS** facilities.<sup>170</sup> A BTA authorization holder, however, must also apply for an individual station license for each transmitter within its BTA.<sup>171</sup> In other services utilizing geographic area licensing, however, a geographic area licensee may generally construct a new transmitter within its licensed area and on a channel covered by its geographic area license so long as (1) the construction complies with the Commission's interference and other rules, (2) an environmental assessment is not required, (3) international coordination is not required, or (4) the proposed transmitter would not affect a radiofrequency quiet zone.<sup>172</sup> We believe that this approach results in efficient service to the public and fewer unnecessary regulatory burdens upon licensees and the Commission. For the reasons noted above, we believe that MDS BTA authorization holders should not be required to obtain individual station licenses for transmitters. We also see no basis for treating MDS BTA authorization holders differently than **ITFS** geographic area licensees.<sup>173</sup> Accordingly, we tentatively conclude that MDS BTA authorization holders should be allowed to place transmitters anywhere within their service area without prior authorization so long as the operation complies with the applicable service rules and that do not affect radiofrequency quiet zones or require environmental review or international coordination. We seek comment on this tentative conclusion.

84. We also propose to modify the procedures that apply when an incumbent license within a BTA is forfeited. Under current rules, if an incumbent site-based **MDS** license is forfeited, the incumbent's service area shall merge and become part of the surrounding BTA service area.<sup>174</sup> The BTA

<sup>170</sup> 47 C.F.R. § 21.924(c).

<sup>171</sup> 47 C.F.R. § 21.925(b).

<sup>172</sup> See, e.g., 47 C.F.R. §§ 90.663, 101.525(a), 101.1009.

<sup>173</sup> See paras. 62 -65 *supra*, regarding geographic area licensing for unassigned **ITFS** spectrum.

<sup>174</sup> 47 C.F.R. § 21.932(a).

70. We seek comment on these and other possible approaches as applied to the 2500-2690 MHz band. As indicated in the chart above, options include:

71. *Licensing these bands on a nationwide basis.* Nationwide licensing provides the maximum advantages of large-area licenses, and it may disadvantage applicants interested in limited service areas. We seek comment on the extent to which nationwide licenses maximize the opportunity to provide the widest array of services and business plans. We also seek comment on whether nationwide licensing provides the necessary incentives for fostering the growth of existing technologies while encouraging the development of new applications. In addition, we seek comment on whether the adoption of nationwide licensing provides potential savings to the time and cost of developing applications and manufacturing equipment to operate in the spectrum at issue in this proceeding. We seek comment as to whether nationwide licensing would affect educational, telemedicine or medical institutions located in particular geographic areas.

72. *Licensing this spectrum, or a subset of this spectrum, using local area licenses.* Under this approach, the Commission could license this spectrum, or some part of this spectrum, using BTAs or aggregations of counties that approximate BTAs. The most compelling argument for that approach is that we used BTAs when auctioning unused MDS spectrum in 1996. A similar approach when auctioning unused ITFS spectrum would be consistent and would arguably make it easier for licensees to aggregate spectrum derived from MDS with spectrum derived from ITFS. We seek comment on whether local area licenses are preferable to nationwide or regional licenses, and if so which local area licensing scheme is preferable. We also seek comment on how local area licenses would affect educational, telemedicine or medical institutions seeking ITFS service.

73. *Licensing these bands using large, regional licenses.* We could license these bands using areas comparable to the six large, regional Economic Area Groupings (EAGs), the twelve slightly smaller Regional Economic Areas (REAs), or the fifty-two Major Economic Areas (MEAs). To ensure consistency with our previous MDS auction, it may be best to choose boundaries aligned with BTA boundaries, i.e., to fashion large regional GSAs comprised of multiple BTAs. While we are aware of interest in BTA-sized licenses, we seek comment on whether there is any demand for regional licenses. We seek comment on what specific large regional licensing areas would be appropriate if we choose to follow that approach. We also seek comment on whether the opportunity to aggregate regional licenses would be sufficient for those seeking to build a nationwide footprint. We also seek comment on how the use of large regional licenses would affect educational, telemedicine or medical institutions seeking ITFS service.

74. Licensing a portion of this spectrum using a nationwide or regional approach, and the remaining portion using smaller geographic areas. Commenters supporting this approach should indicate which spectrum in these bands should be licensed on a nationwide or regional basis and which spectrum should be licensed using small geographic areas. In addition, if commenters support licensing based on service areas other than those discussed above, they should discuss why other designations are more appropriate. We seek comment on how such an approach would affect educational, telemedicine or medical institutions seeking ITFS service.

75. We point out here that Rand McNally is the copyright owner of the Basic Trading Area and Major Trading Area Listings, which list the counties embodied in each BTA, as contained in Rand McNally's *Commercial Atlas & Marketing Guide*.<sup>157</sup> Both the WCA and the Commission have

---

<sup>157</sup> See Rand McNally 2003 *Commercial Atlas & Marketing Guide* at 40-43



that obtained their licenses prior to our 1996 MDS BTA auction have 35-mile PSAs around their main stations.<sup>183</sup> Except with respect to situations where MDS and ITFS PSAs overlap, we have not received many significant expressions of concern over electrical interference resulting from this approach. Therefore, we propose to provide each incumbent on a current ITFS channel and each MDS incumbent with a **PSA** based **on** a circle with a 35-mile radius around its main station, subject to the exceptions discussed below. We ask for comments on this proposal and, in addition, we inquire whether we should change the name of such areas from PSAs to GSAs. A benefit of making this change would be to allow incumbents to change the location of their transmitters without prior Commission approval.

87. In discussing the issue of protected areas for incumbents, the Coalition points out that the rules defining protected areas have changed over the years. As a result, the PSAs assigned to co-channel incumbent MDS and ITFS licensees can **overlap**.<sup>184</sup> The Coalition argues that since none of the licensees with service areas that overlap can satisfy the interference protection criteria in the overlap area, no one can operate in these **areas**.<sup>185</sup> According to the Coalition, the MDS/ITFS industry has informally developed a method for handling this problem. The Coalition notes that the general method for dividing the overlap area is to draw a straight-line (chord) beginning and ending at the two points where the protected service areas **intersect**.<sup>186</sup> This approach has the effect of drawing a boundary along the line connecting the ends of the football-shaped overlap area, with the licensees on either side agreeing to limit the interference they generate outside their boundaries. The Coalition proposes that we codify this approach.

88. The boundary-splitting proposal described above could leave some reception sites marooned on the “wrong” side **of** the line relative to ITFS stations from which they have been receiving service. Based **on** that concern, and **on** the fact that some registered reception sites fall outside a 35-mile radius, the Coalition proposes that we grandfather certain ITFS reception sites located outside the PSA.<sup>187</sup> Under the Coalition’s proposal, **ITFS** licensees would be required to provide technical information to co-channel and adjacent channel licensees concerning the reception sites within twenty-one days of a **request**.<sup>188</sup> Generally, however, we do not protect sites outside the established protected areas in other

(Continued from previous page) —————

moved its transmitter. *Id.* An ITFS licensee’s PSA includes the area within a 35-mile radius of its transmitter site plus any reception sites beyond that radius that were registered with the Commission on September 17, 1998.

<sup>183</sup> See 47 C.F.R. §§ 21.902(d), 21.933(a).

<sup>184</sup> Effective September 15, 1995, the Commission expanded the PSAs of incumbent site-based MDS and ITFS licensees from fifteen miles to thirty-five miles. See Amendment of Parts 21, 43, 74, 78, and 94 of the Commission’s Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, & Cable Television Relay Service, *Second Report and Order*, Gen. Docket Nos. 90-54 and 80-113, 10 FCC Rcd 7074 (1995). In doing so, it created a number of overlaps between licensees whose PSAs had not overlapped before the standard PSA radius was increased.

<sup>185</sup> Coalition Proposal at 20-21 (e.g., the rule changes have created a “no man’s land”).

<sup>186</sup> See Coalition Proposal Appendix C for a detailed explanation.

“Coalition Proposal at 35.

<sup>188</sup> ITFS licensees must identify the location of such receive sites, the antenna make and model and the antenna height above ground and, if known, the adjacent channel D/U ratio that can be tolerated. See Coalition Proposal at 35-36.

areas or licensees may need to comply with limitations on power, antenna height and use which may make geographic area licenses in these areas **less** attractive. In other services where we have implemented geographic area licensing, we did not distinguish between border areas and non-border areas.<sup>164</sup> We propose to license all geographic areas on a uniform basis without regard to whether all or part of the geographic area is in a border area. Geographic area licensees could **use** any authorized ITFS channels subject to the relevant rules and international agreements governing this band. We will review existing agreements to see if it would be useful to initiate discussions with Canada and Mexico concerning renegotiating current agreements in the future to provide greater flexibility than what is allowed by the existing agreements. We believe that applicants are in the best position to assess the effects of any limitations on the use of ITFS channels.

#### **b. Unlicensed Use of Unassigned ITFS Spectrum**

79. Another possible means of ensuring utilization of the unassigned ITFS spectrum would be to allow unlicensed operation in the unassigned ITFS spectrum on a primary **basis**.<sup>165</sup> Unlicensed transmitters may be operated under the provisions of Part 15 of the Commission's **Rules**.<sup>166</sup> Part 15 transmitters generally operate on frequencies shared with authorized services and at relatively low power. Operation of a Part 15 transmitter is subject to the conditions that the device not cause interference to authorized services, and that the device must accept any interference **received**.<sup>167</sup> Part 15 transmitters may not operate in certain restricted bands, including 2655-2690 **MHz**.<sup>168</sup>

80. The use of unlicensed spectrum has grown substantially in the past several years. The innovation allowed by the unlicensed approach has led to an explosion in 802.11(b) wireless local area networks, **for** example, which has benefited consumers. The Spectrum Policy Task Force recognized that "the Commission's dedication of some lower band spectrum to unlicensed uses, e.g. 2.4 GHz, is yielding significant technological and economic benefits in the form of low-power short-distance communications and emerging mesh network technologies that should be further **encouraged**."<sup>169</sup>

81. The characteristics **of** the ITFS spectrum may, depending on the choices we make in this proceeding, make it an attractive choice for unlicensed use. The presence of intense unlicensed operations at 2.4 GHz may mean that equipment efficiencies could be realized **for** operators that engage in operations in both bands. The intense utilization of unlicensed technologies, such as wireless LANs, by educational, telemedicine or medical institutions today may mean that ITFS and unlicensed technologies can provide educations with a useful hybrid spectrum-based teaching tool.

---

<sup>164</sup> See e.g., Amendment **of** Parts 2 and 90 of the Commission's Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 **MHz** and the 935-940 **MHz** Bands Alloted to the Specialized Mobile Radio Pool, PR Docket No. 89-553, *Second Repon and Order and Second Further Notice of Proposed Rule Making*, 10FCC Rcd 6884,6908 (1995).

<sup>165</sup> For further discussion concerning unlicensed operation in the 2500-2690 **MHz** band, including discussion **of** the current rules relating to unlicensed operation in these bands, see Section III.E.6, *infra*.

<sup>166</sup> See 47 C.F.R. Part 15

<sup>167</sup> See 47 C.F.R. § 15.5.

<sup>168</sup> 47 C.F.R. § 15.205.

<sup>169</sup> *Spectrum Policy Repon* at 40.

23, 1998, PetroCom License Corporation (Petrocom), successor in interest to Gulf Coast, amended the petition.<sup>197</sup> PetroCom requested that the Commission authorize two licenses in the Gulf of Mexico and adopt eligibility restrictions to avoid excessive concentration of licenses.<sup>198</sup> Additionally, PetroCom asked the Commission to establish a service area in the Gulf similar to the service areas established in the *MDS Report and Order*.<sup>199</sup> On August 11, 1999, the Commission sought comment on PetroCom's Amended Petition.<sup>200</sup> On May 3, 2002, the Commission issued the *Gulf Notice* seeking comments on PetroCom's amended petition?"

92. In the *Gulf of Mexico MDS NPRM*, the Commission proposed to establish a GSA in the Gulf of Mexico ("Gulf Service Area")." The Commission proposed to adopt the same rules, with certain limitations, as those service areas established in the *MDS Report and Order*. The Commission solicited comment on the technical and economic effects of implementing the proposals.<sup>203</sup>

93. *Discussion.* Generally, commenters support creation of a Gulf Service Area. However, they express concern over the timing of the adoption of rules for the service area.<sup>204</sup> The commenters seek to delay the licensing of MDS in the Gulf of Mexico until after the Commission establishes mobile service rules,<sup>205</sup> as well as until we address the Coalition's proposals.<sup>206</sup> We note that we are proposing mobile service rules in this proceeding.<sup>207</sup> We believe that by addressing the use of MDS in the Gulf simultaneously with the consideration of other MDS flexibility issues that we decrease any attendant delay in the provision of service in the Gulf of Mexico. Accordingly, we disagree with the commenters that we should defer consideration of all of the issues involving the Gulf of Mexico until after adoption

<sup>197</sup> Amended Petition for Rulemaking of PetroCom License Corporation (Amended Petition) (Nov. 23, 1998).

<sup>198</sup> See Pleading Cycle Established for Comments on Amended Petition for Rulemaking to Amend Parts 21 and 74 of the Commission's Rules to Permit Licensing in the Multipoint Distribution Service and the Instructional Television Fixed Service for the Gulf of Mexico, *Public Notice*, 14 FCC Rcd 13,322 (1999) (*Amended Petition PN*). PetroCom also requested that the Commission set aside one of the licenses for small businesses, streamlining of the licensing process, modification of the two-way rules for stations operating in the Gulf. *Id.*

<sup>199</sup> Amended Petition at 4.

<sup>200</sup> *Id.* The WCA opposed the Amended Petition while Petrocom, Bachow/Coastel, L.L.C. (Bachow/Coastel) and RIG Telephones Inc. d/b/a Datacom (Datacom) each filed comments on September 10, 1999. See reply comments on September 27, 1999. Bachow/Coastel, WCA and Datacom filed reply comments. Finally, on October 8, 1999 and November 10, 1999, WCA and PetroCom filed comments in the form of a letters. These letters were not authorized pleadings pursuant to our rules; however, in order to develop a full and complete record, they were incorporated as part of the record in this proceeding.

<sup>201</sup> *Gulf Notice*, 17 FCC Rcd 8446,

<sup>202</sup> See *Gulf Notice*, 17 FCC Rcd at 8447 ¶ 2

<sup>203</sup> *Id.*

<sup>204</sup> PetroCom Comments at 3-5; Stratos Offshore Services Company Comments at 2-3 (Stratos Offshore); WCA Comments at 4; PetroCom Reply Comments at 1-4.

<sup>205</sup> See PetroCom Comments at 3-5; PetroCom Reply Comments at 1-4.

<sup>206</sup> See WCA Comments; Shatos Offshore Comments at 2-3

<sup>207</sup> See para. 132, *infra*.

authorization holder, however, cannot operate within that area until it files a long form application to operate a transmitter and the Commission grants that **application**.<sup>175</sup> In other wireless services, frequencies associated with cancelled or forfeited incumbent authorizations automatically revert to the geographic license **holder**.<sup>176</sup> We believe that requiring geographic area licensees to obtain a separate authorization prior to operating within the area of a cancelled or forfeited incumbent license is an unnecessary regulatory burden and causes delays in service. Consistent with the approach we have taken in other wireless services, we tentatively conclude to modify the rules to provide that in the case where an incumbent license cancels or is forfeited, the right to operate would automatically revert to the licensee that holds the BTA license.<sup>177</sup>

#### **b. Geographic Area Licenses for Site-Licensed Incumbents**

85. In tandem with our proposal to use geographic areas to license ITFS spectrum, we must assess the potential impact of this proposal on incumbent ITFS licensees that have site-based licenses. Previously, when implementing geographic area licensing for spectrum that had incumbents, the Commission traditionally has used an "overlay" licensing approach where the Commission grandfathered (protected) existing constructed and operating **stations**<sup>178</sup> or provided for specified relocation periods. While an overlay approach has worked well in the past, the Coalition contends that there are inherent difficulties with an approach that allows incumbents to remain in place indefinitely because high-power video and low-power cellular system will share this **band**.<sup>179</sup> The Coalition believes these difficulties could hinder the implementation of new advanced services in this band because most geographic area licensees and incumbents would probably use the band to provide a low-power two-way service," while some incumbent licensees are using the band to provide high-power video operations (educational or commercial wireless cable).

86. Since we are proposing to protect incumbent operations on current ITFS channels, we must define the protected areas. The Coalition proposes to give each existing site-based **MDS** and ITFS licensees a GSA, based on the current rules.<sup>181</sup> In this regard, we note that applicants for new stations on ITFS channels must provide protection to incumbents based on **PSAs**.<sup>182</sup> We note that **MDS** incumbents

<sup>175</sup> 47 C.F.R. §§ 21.925(c)(4), 21.932(c).

<sup>176</sup> See, e.g., 47 C.F.R. § 101.1331 (MAS): Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands, ET Docket No. 95-183, 12 FCC Rcd 18600, 18637-8 ¶ 79 (*39 GHz Report and Order*).

<sup>177</sup> See, e.g., *39 GHz Report and Order*, 12 FCC Rcd at 18637-8, ¶ 79

<sup>178</sup> (e.g., geographic area licensees must protect existing co-channel stations located within their geographic service area) See Amendment of the Commission's Rules Regarding Multiple Address Systems, WT Docket No. 97-81, 15 FCC Rcd 11,956(2000); See *MDS Auction R&O*, 10 FCC Rcd 9589.

<sup>179</sup> Coalition Proposal at 10

<sup>180</sup> Other licensees agree that many existing ITFS licensees will move or are contemplating moving away from traditional one-way high-power video-based operations. See Joint Comments of ITFS Parties at 2.

<sup>181</sup> Coalition Proposal at 20

<sup>182</sup> 47 C.F.R. §§ 74.903, 21.902(d). Beginning on September 15, 1995, the initial service boundaries were frozen, i.e., the circular PSA boundaries were not to be changed regardless of whether or not the licensee subsequently (continued...)

96. Although WCA supports the Commission's proposal to establish the demarcation line of the Gulf Service Area at twelve nautical miles from the coastline,<sup>218</sup> PetroCom maintains that the better approach is to employ the boundaries used for cellular service in the Gulf.<sup>219</sup> In the *Gulf Cellular Order*, the Commission established the Gulf Service Area boundary as the land-water line. PetroCom argues that because current MDS and ITFS licensees are providing fixed services that they do not require protection beyond the shore.<sup>220</sup> Additionally, PetroCom asserts that allowing land based MDS/ITFS operations to extend into the Gulf of Mexico will create interference issues for Gulf operations and discourage Gulf licensees from fully developing their systems.''' Moreover, PetroCom asserts that this definition of the inner boundary of the Gulf Service Area is consistent with our Rules, which base BTA boundaries on market areas defined by Rand McNally, which follow county lines.<sup>222</sup> We seek comment on where to establish the demarcation line for the Gulf Service Area.

97. For the most part, commenters to this proceeding did **not** address the Commission's proposals with regard to licensing MDS in the Gulf of Mexico. Instead, commenters focused their remarks on requesting a delay in the consideration of the issues presented in the *Gulf of Mexico MDS NPRM* until after the Commission considered the Coalition's proposal to transform the service. Accordingly, we do not believe the record has developed satisfactorily to resolve issues concerning the amount of spectrum to license in the Gulf Service Area, competitive bidding, partitioning and disaggregation, interference protection requirements, construction period, and license term. We invite commenters to address these issues in the broader context of this comprehensive proceeding. However, where differences exist with regard to the treatment of Gulf licenses, commenters should explain those differences and expound upon the rationale for the different treatment.

## 6. Transition to New Band Plan

98. An important issue relating to the adoption of any new band plan is the mechanism to use to transition existing licensees to a new band plan. There are four alternative kinds of transition mechanisms that are relevant in this context:<sup>223</sup> expanded rights overlay licenses combined with mandatory relocation of incumbents; expanded rights overlay licenses with grandfathering of incumbents; expanded rights overlay licenses combined with voluntary band-clearing restructuring incentives for incumbents; and expanded rights granted to incumbent licensees under existing licenses.''' The Coalition's proposal most nearly resembles the second of those four approaches, though it reflects elements of the fourth approach as well.

<sup>218</sup> WCA Comments at 6.

<sup>219</sup> PetroCom Comments at 5-6 *citing* Cellular Service and Other Commercial Mobile Radio Services in the Gulf of Mexico. *Report and Order*, 17 FCC Rcd 1209 (2001) (*Gulf Cellular Order*); PetroCom Reply Comments at 4-6 *citing* *Gulf Cellular Order*, 17 FCC Rcd at 1219¶ 31.

<sup>220</sup> PetroCom Comments at 6

<sup>221</sup> PetroCom Reply Comments at 5.

<sup>222</sup> PetroCom Comments to the Amended Petition at 4.

<sup>223</sup> *Spectrum Policy Report* at 49.

<sup>224</sup> *Id.*

services where we have implemented geographic area licensing.<sup>189</sup> Requiring licensees to provide such additional technical information is contrary to our goal of reducing regulatory burdens. We are also concerned that providing continued protection to out-of-area reception sites could confuse the definition of GSAs for site-licensed incumbents, whether or not we choose to allow continued high-power operations in part of the band. We invite comment on the costs versus benefits of continuing to protect reception sites that fall outside the 35-mile service areas of incumbents, or beyond boundaries established mathematically by splitting areas of overlap. Commenters supporting the Coalition's position on this issue should provide information on how many receive-only sites are located outside the PSAs of stations from which they have been receiving service. We seek comment on alternative ways of addressing this problem.

### c. Gulf of Mexico Proceeding

89. **Background.** In the *MDS Report and Order*, the Commission adopted a licensing plan under which it assigned, through a simultaneous multiple round bidding process, one MDS authorization for each of the 487 BTAs and six additional geographic areas.<sup>190</sup> A BTA authorization holder may construct facilities to provide service over any usable MDS channels within the BTA.<sup>191</sup> A MDS channel is usable if the proposed station design is in compliance with the Commission's interference standards.”

90. The signals of a BTA authorization holder cannot interfere with any other BTA authorization holder's signals.<sup>193</sup> In addition, BTA authorization holders cannot interfere with the PSAs of incumbent MDS operators and ITFS licensees within their BTAs.<sup>194</sup> However, the BTA authorization holder may negotiate interference rights with BTA authorization holders and incumbents.<sup>195</sup>

91. On May 21, 1996, the Gulf Coast MDS Service Company (Gulf Coast) filed a Petition for Rulemaking requesting that the Commission amend its rules to permit licensing of MDS and ITFS spectrum in the Gulf of Mexico.<sup>196</sup> Specifically, Gulf Coast sought to have the Commission treat the Gulf of Mexico as one service area and to hold an auction to license service in the area. On November

<sup>189</sup> Examples of services where service areas are defined exclusively on the basis of signal strength limits at geographic borders include the lower 700 MHz band (47 C.F.R. § 27.55(a)(2)), broadband PCS (47 C.F.R. § 24.236), Part 27 services in the 2305-2320 and 2345-2360 MHz bands (47 C.F.R. § 27.55(a)(1)), and Part 27 services in the 1390-1395 and 1432-1435 MHz bands (47 C.F.R. § 27.55(a)(3)).

<sup>190</sup> See *MDS R&O*, 10 FCC Rcd at 9608-09; see also *Gulf Notice*, 17 FCC Rcd at 8448 ¶ 7. Rand McNally defined 487 BTAs in the 1992 *Commercial Atlas and Marketing Guide*. Because Rand McNally did not include some geographic areas that were the subject of the MDS auction, those areas were added to Rand McNally's list, bringing the total number for auctioning to 493 authorizations. The six additional areas are American Samoa, Guam, Northern Mariana Islands, San Juan, Puerto Rico; Mayaguez/Aguadilla-Ponce, Puerto Rico; and the United States Virgin Islands. *Id.* at 8447 n.4. See also 47 C.F.R. § 21.924(b).

<sup>191</sup> See *MDS R&O*, 10 FCC Rcd at 9615-18; see also *Gulf Notice*, 17 FCC Rcd at 8448 ¶ 7.

<sup>192</sup> See *MDS R&O*, 10 FCC Rcd at 9615-18; see also *Gulf Notice*, 17 FCC Rcd at 8448 ¶ 7.

<sup>193</sup> See 47 C.F.R. § 21.902.

<sup>194</sup> See 47 C.F.R. § 21.933.

<sup>195</sup> See *Gulf Notice*, 17 FCC Rcd at 8448 ¶ 8.

<sup>196</sup> Petition for Rulemaking of Gulf Coast MDS Service Company (Gulf Coast Petition) (May 21, 1996).

would be to delay the transition rather than to expedite it because the parties would be embroiled in constant bickering over the terms of transition and who should be responsible for what costs.<sup>234</sup>

102. Another alternative would allow incumbents to bargain freely for the best inducements they can obtain from Proponents to convert their operations prior to a deadline for conformance with the new band plan, while requiring incumbents to fund their own conversions if they do not accept a Proponent's offer to fund the conversion ahead of time. Under such an approach, the incumbent's bargaining leverage would be greater the further in the future we established the conversion deadline, and it would gradually diminish as the deadline approached. We believe that we have the legal authority to apply such deadlines pursuant to Section 316(a) of the Communications Act, as amended, which permits us to modify a license or construction permit if such action is in the public interest.<sup>235</sup> Section 316(a) requires that we notify the affected stations of the proposed action, the public interest reasons for the action, and afford at least thirty days to respond. This procedure is now set forth in Section 1.87 of our Rules.<sup>236</sup> Licenses may be modified through rule making?" as we did when establishing the cellular telephone service.<sup>238</sup> We seek comment on alternative means by which we might lawfully and efficiently implement a schedule for modifying existing MDS and ITFS stations, such as the adoption of a single deadline by rulemaking rather than through station-by-station processes.

103. A second possible approach would be to adopt a three-phase transition process: a voluntary negotiation period, during which incumbents could bargain freely for the best inducements they could obtain from Proponents, followed by a mandatory negotiation and conversion phase, during which Proponents could compel incumbents to reduce their signal strengths by offering to fund their conversions, based on specific criteria to be defined in our rules. In the final stage, Proponents would be entitled to compel incumbents to take whatever steps are necessary to reduce their signal strengths at the incumbents' own expense. Such an approach would resemble the band-clearing procedures that we adopted for terrestrial fixed microwave services in the bands that we reallocated to PCS,<sup>239</sup> except that MDS and ITFS incumbents would ultimately be required only to reduce their signal strengths at their GSA boundaries, not cease operations altogether or relocate.

---

<sup>234</sup> *Id.*

<sup>231</sup> 47 U.S.C. § 316(a). We note that converting existing licensees to geographic service area licenses would eliminate the need to modify authorizations for individual transmitters.

<sup>236</sup> 47 C.F.R. § 1.87.

<sup>237</sup> See Amendment of Part 22 of the Commission's Rules to Provide for Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules, *Notice of Proposed Rulemaking*, 5 FCC Rcd 1,044, 1,048 ¶ 25 (1990), *citing* *WEEN, Inc. v. United States*, 396 F.2d 601 (2d Cir. 1968); *American Airlines, Inc. v. CAB*, 359 F.2d 624 (D.C.Cir. 1966); *Upjohn Co. v. Food and Drug Admin.*, 911 F.2d 1583 (D.C.Cir. 1987).

<sup>238</sup> See generally, Cellular Communication Systems (Cellular Systems), *Report and Order*, 86 F.C.C.2d 469 (1981), *modified*, 89 F.C.C.2d 58 (1982), *further modified*, 90 F.C.C.2d 571 (1982); *appeal dismissed sub nom. United States v. FCC*, No. 82-1526, Slip Op. (D.C. Cir. Mar. 3, 1983); Rules for Rural Cellular Service, *First Report and Order*, 60 Rad. Reg. 2d 1029 (1986), *modified*, 2 FCC Rcd 733 (1987), *further modified*, 2 FCC Rcd 3366 (1987), 4 FCC Rcd 5272 (1988), 3 FCC Rcd 4403 (1988), 4 FCC Rcd 4,464 (1989).

<sup>239</sup> See 47 C.F.R. §§ 101.69-101.79

of mobile service rules. Resolving the primary issue of whether to establish a Gulf Service Area is a preliminary step that does not have to wait for the adoption of final rules in this proceeding. As no commenter opposed the establishment of a Gulf Service Area, we adopt the proposal to create a Gulf service area. The parties who asked the Commission to establish a Gulf Service Area state that establishing such a service area would allow specialized businesses that operate in the Gulf of Mexico to obtain advanced communications services that are currently unavailable to them and that would allow these businesses to operate more efficiently.<sup>208</sup> The Commission has also noted in other services that creating a service area for the Gulf of Mexico region will help meet the growing communications needs of businesses operating in the Gulf.<sup>209</sup>

94. We note that we have incorporated, as WCA asks, the Gulf of Mexico proceeding into this comprehensive review of the entire band.'" Although the Commission proposed to create a Gulf Service Area for MDS operations, the Commission proposed to exclude all **ITFS** channels from licensing in a Gulf Service area.'" The Commission indicated that ITFS licensees have not expressed an interest in obtaining licenses in the Gulf of Mexico, the area most likely has little need **for** educational service, and the requested commercial use does not require the **full** bandwidth available in the 2500-2690 MHz band.'" No commenter specifically addressed the Commission's proposal to exclude ITFS channels.<sup>213</sup> In order to ensure that we have a full and complete record, we seek further comment on whether we should reallocate ITFS channels in the Gulf Service Area for other uses. We specifically seek comment on whether we should consider unlicensed uses.

95. Unlike BTAs established by Rand McNally, the Gulf Service Area does not have a significant population center and is based primarily on the geographic confines of the Gulf and on the commonality of commercial interests of the potential users of any service **provided**.<sup>214</sup> Thus, the Commission proposed to use the same boundary definitions for this Gulf Service Area as adopted in the *WCS R&O*.<sup>215</sup> As a result, the Commission proposed that land-based license regions abutting the Gulf of Mexico will extend to the limit of the territorial waters of the United States in the Gulf of Mexico, which is the maritime zone that extends approximately twelve nautical miles from the United States coastline.<sup>216</sup> Beyond that line of demarcation, the Commission created a Gulf Service Area, which extended from that line outward to the geographic limits consistent with international agreements.<sup>217</sup>

---

<sup>208</sup> See Gulf Coast Petition at 4.

<sup>209</sup> See, e.g., Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service ("WCS"), GN Docket No. 96-228, *Report and Order*, 12 FCC Rcd 10785, 10816 ¶ 59 (1997) (*WCS R&O*).

<sup>210</sup> See WCA Comments at 7.

<sup>211</sup> See *Gulf Notice*, 17 FCC Rcd at 8450 ¶ 13.

<sup>212</sup> *Id.* at 8450 ¶ 13.

<sup>213</sup> We note that PetroCom's Comments and Reply Comments refer to MDS/ITFS spectrum. PetroCom Comments at 5; PetroCom Reply Comments at 2.

<sup>214</sup> See *Gulf Notice*, 17 FCC Rcd at 8452 ¶ 16.

<sup>215</sup> *Id.* at 8453 ¶ 18.

<sup>216</sup> *Id.*

<sup>217</sup> *Id.*



Commission did not see a valid reason to change the ITFS eligibility rules.<sup>246</sup> In 1985, after recognizing that ITFS signals were reaching the homes of MDS subscribers, the Commission revised the main purpose of ITFS. The Commission determined that the transmission of instructional material for accredited educational institutions was an "**essential use**" of ITFS stations, *i.e.*, at least some of their capacity had to be used for the transmission of course-oriented formal instructional material.<sup>247</sup> In 1991, the Commission voiced its support of the role of ITFS in providing improved educational opportunities for **all**.<sup>248</sup> Consequently, the Commission remained committed to not jeopardizing the current or future ability of ITFS to fulfill its primary intended purpose of providing educational material for instructional use.<sup>249</sup> In fact, the Commission expressed its intention to enforce strictly the existing eligibility rules.<sup>250</sup>

108. In many respects, our regulatory policies toward MDS and, to a lesser extent, our treatment of ITFS over the years have represented pioneering movements toward flexible use. We initially limited MDS licensees to common carrier operations and adopted technical rules that limited the service to point-to-multipoint distribution **from** a single point, but we allowed MDS subscribers to transmit any of a broad range of content types: private television, high speed computer data, facsimile, control information, or other communications capable of radio transmission.<sup>251</sup> In 1983, the *First Leasing Decision* authorized ITFS operators to begin leasing unused channel capacity to commercial entities. Thus, as WCA notes in comments that it filed in our Spectrum Policy Task Force proceeding, "The secondary markets concept (under which licensees could lease the spectrum usage rights to third parties) has been a staple of the Commission's MDS/ITFS rules for twenty years."

109. One byproduct of our flexible use policy toward ITFS has been a reduction in the proportion of ITFS channel capacity used **for** educational purposes. **As** the MDS industry struggled to achieve commercial viability and ITFS operators sought to generate enough revenue to survive, we gradually relaxed the restrictions on channel leasing. One step at a time, over a fifteen year period, we

<sup>246</sup> Amendment of Parts 2 and 74 of the Commission's Rules and Regulations to Establish a New Class of Educational Television Service for the Transmission of Instructional and Cultural Material to Multiple Receiving Locations on Channels in the 2500-2690 MHz Frequency Band, Docket No. 14744, *Second Report and Order*, 30 F.C.C. 2d 197, 200 ¶ 10 ("*ITFS Second R&O*").

<sup>247</sup> Amendment of Part 74 of the Commission's Rules and Regulations in Regard to the Instructional Television Fixed Service, *Second Report and Order*, 101 F.C.C.2d 50, 80 ¶¶ 75-78 (1985) (*emphasis added*) *Part 74 Second R&O*). The Commission also eliminated the requirement to transmit course-oriented material to selected accredited school sites if in lieu thereof the licensee names "the school(s) and the degree(s) or diploma(s) for which the formal programming will be offered and describe[s] the administration of the courses(s)," along with supporting documentation. 47 C.F.R. § 74.931(a)(2).

<sup>248</sup> Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz Bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, & Cable Television Relay Service, *Second Report and Order*, 6 FCC Rcd 6,764, 6,774 ¶ 48 n.45 (1991).

<sup>249</sup> *Id.*

<sup>250</sup> *Id.* at 6 FCC Rcd 6,774 n.45.

<sup>251</sup> Amendment of Parts 1, 2, and 43 of the Commission's Rules and Regulations to Provide for Licensing and Regulation of Common Carrier Radio Stations in the Multipoint Distribution Service, *Report and Order*, 45 FCC 2d 616,617 ¶ 5 (1974).

<sup>252</sup> Comments of WCA in ET Docket No. 02-135, at 5-6, filed Jan. 27, 2003.

99. The Coalition proposes that we rely on a combination of regulatory and market forces to effect the transition to its proposed band plan. The Coalition recommends a market-by-market transition process to the new band plan that allows **MDS** and **ITFS** licensees to continue to operate pursuant to the current rules until an **MDS** or **ITFS** licensee or lessee (called a “proponent”) triggers the transition process.<sup>225</sup> In general, the Coalition would require the Proponent to fund any conversion costs incurred by **ITFS** operators but would require **MDS** operators to pay their own conversion costs.” In addition, any party offering a commercial service using **MDS** or **ITFS** channels would be required to reimburse the Proponent for its *pro rata* share of the cost of transitioning the facilities that it uses and the cost of transitioning facilities associated with any overlapping transition impact area.<sup>227</sup> A Proponent would be permitted, at its sole discretion and at any time, to trigger the transition process with respect to any **MDS** or **ITFS** licensee that has a GSA located in whole or in part within 150 miles of any portion of its GSA.<sup>228</sup> At any time during the transition planning period, the Proponent would be permitted, in its sole discretion, to decide not to proceed with the transition process in whole or in part.<sup>229</sup> The Coalition plan would require the Commission to enact detailed rules concerning the mechanisms of the transition process and set forth nine safe harbors describing proposals that licensees subject to transition would have to accept from **proponents**.<sup>230</sup> The Coalition does not recommend that we set any fixed deadlines.

100. We seek comment on whether we should impose a date certain for completing the transition process if we adopt a process resembling that proposed by the Coalition. The Coalition recognizes that the absence of specific deadlines in its proposal could leave hold-out licensees in a position to obstruct the re-channelization process, but urges that we adopt a very detailed list of criteria defining what sorts of proposals **ITFS** licensees must accept if **Proponents** offered to implement them or pay for their implementation.<sup>231</sup> This proposal resembles the process we have applied for clearing incumbents from the upper 200 channels in the 800 MHz band to make way for Specialized Mobile Radio operators licensed to Economic Areas.” However, the Coalition proposes a far more detailed set of criteria for mandatory negotiations between **MDS** and **ITFS** operators, and does not provide for reimbursement of **MDS** operators undergoing involuntary conversion to lower signal strengths.

101. As an alternative, we ask whether we should impose a date or dates certain by which all licensees must comply with our new interference rules. In that regard, an *ad hoc* group of **MMDS** licensees has expressed concern that the detailed transition rules that the Coalition proposes as an alternative to specific deadlines would be cumbersome. These licensees view the plan as requiring complex reimbursement schemes, 150-mile daisy chains and other complications resulting from the voluntary market-by-market **approach**.<sup>233</sup> They assert that the net result of adopting the Coalition Plan

<sup>225</sup> A detailed description of the Coalition transition process is contained in Appendix C.

<sup>226</sup> Coalition Plan, Appendix B at 5

<sup>227</sup> *Id.*, Appendix B at 28-29.

<sup>228</sup> *Id.*, Appendix B at 13

”*Id.*, Appendix B at 14

<sup>230</sup> *Id.*, Appendix B at 21-28,

<sup>231</sup> The Coalition does not propose that any **MDS** licensees receive compensation from **Proponents**.

<sup>232</sup> See 47 C.F.R. § 90.699.

<sup>233</sup> Comments of **MMDS** Licensee Coalition (“**MMDS** Licensees”), filed November 14, 2002, at 3

require a concomitant increase in the hours of educational programming provided by ITFS operators.<sup>259</sup>

- In 1998, the Commission again declined to increase the hours of educational programming offered on ITFS stations and further relaxed its requirements in four ways. First, we eliminated the requirement that ITFS operators fulfill their minimum educational usage obligations by transmitting such content on their own stations, allowing them the option of transmitting it on other licensees' ITFS or MDS stations.<sup>260</sup> Second, we determined that digital ITFS stations would in most cases be required to use or reserve no more than 5 percent of their transmission capacity for educational programming.<sup>261</sup> Third, we gave ITFS licensees increased flexibility in determining which transmissions would qualify as satisfying the service's educational usage requirements, to include but not be limited to teacher conferencing, remote test administration, distribution of reports and assignments, research toward and sharing **work** of progress in projects for courses, professional training, continuing education, and other similar **uses**.<sup>262</sup> Finally, we declined to impose any educational usage requirements upon digital ITFS response stations or response station hubs, based on the understanding that ITFS operators would not be able to control the content of upstream transmissions from end **users**.<sup>263</sup>

Thus, from 1983 through 1998 we progressively reduced the performance required of ITFS operators while expanding the opportunities for ITFS operators to generate income by leasing **out** their channels, and we substantially increased MDS operators' access to ITFS spectrum.

110. As noted above, in 1987, we provided MDS licensees the additional option of electing to provide service and be regulated on a non-common carrier (and non-broadcast) **basis**.<sup>264</sup> In 1998, we revised our rules to allow both MDS and ITFS licensees to construct digital two-way systems capable of providing high-speed, high-capacity broadband service, including two-way Internet service via cellularized communication systems.<sup>265</sup> In 2001, we applied a mobile allocation in the 2500-2690 MHz band.<sup>266</sup> Despite those several decisions removing various restrictions from MDS and ITFS, however, we

---

*''Digital Modulation Declaratory Ruling and Order*, 11 FCC Rcd at 18872-18873, ¶ 58.

<sup>260</sup> Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-way Transmissions, *Report and Order*, 13 FCC Rcd 19112, 19166, ¶ 101 (1998).

<sup>261</sup> *Id.* at 19159 ¶ 89. The Commission also maintained its longstanding requirement that the ITFS operator transmit at least 20 hours per week of educational programming per 6 MHz channel. *Id.*

<sup>262</sup> *Id.* at 19154 ¶ 81.

<sup>263</sup> *Id.* at 19,155 ¶ 82.

<sup>264</sup> Revisions to Part 21 of the Commission's Rules Regarding Multipoint Distribution Service, *Report and Order*, 2 FCC Rcd 4,251 (1987). In 1983, we determined that ITFS operators could choose to provide service on either a private or common carrier basis and would be subject to regulation commensurate with their style of operation. *Allocation R&O*, 94 F.C.C.2d 1203, 1248-1255, ¶¶ 111-129.

<sup>265</sup> Amendment of Parts 21 and 74 to Enable Multipoint Distribution Service and Instructional Television Fixed Service Licensees to Engage in Fixed Two-way Transmissions, MM Docket No. 97-217, *Report and Order*, 13 FCC Rcd 19,112 (1998). *recon.*, 14 FCC Rcd 12,764 (1999), *further recon.*, 15 FCC Rcd 14,566 (2000) (*Two-Way Order*).

<sup>266</sup> *Mobile Repon and Order*, 16 FCC Rcd 17,222 (2001).

104. A third alternative would be to refrain from providing for a voluntary negotiation period and proceed immediately to a mandatory negotiation and conversion phase, later to be followed by a sunset date after which incumbents would be required to assume their own conversion costs. The Commission used this procedure to clear terrestrial fixed microwave services from 18.58-19.3 GHz band when the Commission reallocated it to FSS.<sup>240</sup> We seek comments on the benefits and disadvantages of a voluntary negotiation period, and inquire what mandatory conversion requirements should apply if we decide not to adopt a voluntary negotiation period. We seek comment on all of these approaches, on other possible alternatives, on the appropriate date or dates for any deadlines that we might apply under any of the transition proposals and on the criteria that we should apply during any mandatory negotiation and conversion phase, should we choose to adopt one.

105. An altogether different option would be to rely on an auction to restructure the bands.” Such an approach might mitigate the need for a complicated set of transition rules because bidders might be able to obtain efficient packages of encumbered and unencumbered spectrum for new uses without engaging in costly and time-consuming bilateral and multi-lateral negotiations.<sup>242</sup> The efficacy of such an approach, of course, would depend upon how many incumbents chose to make their licenses available for competitive bidding. Transition rules might be necessary as a fall-back even if we conduct such an auction, to transition incumbent licensees that choose not to participate or receive no bids that induce them to sell.

106. We seek comment on all issues relating to the transition of existing licensees to a new band plan, including, but not limited to, the Coalition Proposal. Commenters addressing this issue should discuss in detail their preferred mechanisms for adopting any transition.<sup>243</sup>

## 7. ITFS Eligibility Restrictions

107. ITFS main channels account for 120 MHz of the 2500-2690 MHz band. Initially, the Commission intended ITFS stations to provide formal educational and cultural development in aural and visual form to students enrolled in accredited public and private schools, colleges and universities.<sup>244</sup> Generally, our Rules limit eligibility for ITFS to: (1) accredited educational institutions, (2) governmental organizations engaged in the formal education of enrolled students, and (3) nonprofit organizations whose purposes are organizational and include providing educational and educational television materials to accredited institutions and governmental organizations.<sup>245</sup> In 1971, the

<sup>240</sup> See 47 C.F.R. §§ 101.85-101.95.

<sup>241</sup> See Section III.J, *infra*.

<sup>242</sup> See Evan Kwerel and John Williams, *A Proposal for a Rapid Transition to Market Allocation of Spectrum* (FCC Office of Plans and Policy Working Paper, Nov. 2002).

<sup>243</sup> Some MDS licensees, who also lease ITFS channels, employ CARS for their video operations as Wireless Cable Systems. They would continue to be eligible to be CARS licensees for those video operations, but not for low power broadband operations. Transition to the new band plan must also consider modification of those operations.

<sup>244</sup> 47 C.F.R. § 74.931(a)(1)

<sup>245</sup> See 47 C.F.R. § 74.932(a). Under certain circumstances, “wireless cable entities” may obtain access to ITFS channels so long as at least eight other ITFS channels remain available for future ITFS use. See 47 C.F.R. § 74.990-74.992.

have continued to limit the classes of applicants that are eligible to obtain ITFS licenses

111. In recent years, we have pursued a general policy of eliminating use restrictions in radio licenses except in circumstances where there are clear and compelling reasons for retaining them. The basis for this policy was articulated in the *Spectrum Policy Statement* in 2000: if market forces are allowed to operate without being restricted by government, they will tend to push the use of radio licenses to their highest valued applications.<sup>267</sup> Since then, we have applied that policy to broaden eligibility in the Cable Television Relay Service;<sup>268</sup> to establish eligibility for a broad variety of users in the 648-746 MHz band (reclaimed from broadcasters using TV channels 52-59);<sup>269</sup> to establish service rules for the 747-762 MHz and 777-792 MHz bands (reclaimed from broadcasters using TV channels 60-69);<sup>270</sup> to explore the possibility of introducing third generation cellular services in frequency bands previously reserved for traditional forms of cellular, broadband PCS, and SMR, as well as in the 1710-1755 MHz, 1755-1850 MHz, 2110-2150 MHz, 2160-2165 MHz and 2500-2690 MHz bands;<sup>271</sup> and to encourage the development of secondary markets in radio licenses.<sup>272</sup> Before adopting the *Spectrum Policy Statement*, the Commission applied a flexible use policy when establishing WCS. In that service, the Commission imposed no eligibility restrictions other than the foreign ownership restrictions set forth in Section 310 of the Communications Act.<sup>273</sup> All of those decisions have occurred since we last reaffirmed our ITFS eligibility policies in 1991.

112. While our general policy toward use restrictions has evolved since 1991, significant events specific to ITFS have occurred that warrant our revisiting whether an eligibility restriction continues to be necessary. Those events include the increased use of ITFS spectrum in MDS systems, and the development of alternative means of providing educational content to students. Based on those developments, we believe that it serves the public interest to consider providing both current MDS and ITFS licensees with additional flexibility.

113. Although our rules state that the primary use of ITFS is for educational and cultural development, they allow an ITFS licensee to lease up to ninety-five percent of its channel capacity for non-educational programming.<sup>274</sup> This increased use of ITFS spectrum in connection with MDS systems

<sup>267</sup> Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets, 15 FCC Rcd 24,178 (2000) (Spectrum Policy Statement).

<sup>268</sup> Amendment of Eligibility Requirements in Part 78 Regarding 12 GHz Cable Television Relay Service, *Report and Order*, 17 FCC Rcd 9,930 (2002).

<sup>269</sup> See Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), *Notice of Proposed Rulemaking*, 16 FCC Rcd 7,278 (2001).

<sup>270</sup> Service Rules for 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *First Report and Order*, 15 FCC Rcd 476 (2000).

<sup>271</sup> Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, Including Third Generation Wireless Systems, *Notice of Proposed Rulemaking and Order*, 16 FCC Rcd 596 (2001).

<sup>272</sup> Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, *Notice of Proposed Rulemaking*, 15 FCC Rcd 24,203 (2000).

<sup>273</sup> WCS R&O, 12 FCC Rcd 10,785.

<sup>274</sup> 47 C.F.R. § 74.931(d)(1)

reduced the educational obligations of ITFS operators to a minimal level, ultimately allowing them to lease all but a small fraction of their capacity to commercial operators:

- In 1985 the Commission determined that **ITFS** licensees would be required to transmit at least 20 hours **of** instructional programming per week on each of their channels between 8 AM and 10 PM. It also required ITFS operators to preserve their right to recapture at least an additional 20 hours per week, including at least three hours per day on weekdays between 8 AM and 10 PM.<sup>253</sup> The Commission further determined, however, that it would permit commercial channel lessees to build, own, and operate the transmitters involved, provided that ITFS licensees met the above-stated programming **requirements**.<sup>254</sup>
- By 1991, ITFS operators were increasingly reliant upon MDS operators as a source of revenue and operational support, but **MDS** operators were finding it difficult to compete against cable television and DBS while simultaneously supporting ITFS. The inability to lease ITFS channels on a 24-hour-per-day basis was impairing the ability of MDS operators to make effective commercial use of ITFS capacity, which depressed the prices that MDS operators were willing and able to pay for ITFS capacity. Thus, ITFS operators willingly acquiesced when the Commission eliminated the time-of-day restrictions on its minimum **ITFS** transmission requirements and authorized operators to use automatic channel-switching equipment to create the appearance, to end **users**, of channels that were 100 percent dedicated to commercial programming.<sup>255</sup> We referred to this process as “channel mapping.”
- Three years later, the Commission acknowledged that channel-mapping was a costly endeavor and allowed ITFS licensees to load all of the educational programming required for a four-channel system onto one ITFS channel, leaving the other three channels available for full-time leasing to commercial operators.<sup>256</sup> In addition, the Commission determined that ITFS operators need not keep an additional 20 hours per channel available for recapture on their own ITFS channels if, in lieu thereof, the ITFS operator negotiated an option to obtain access to an equal number **of** hours on another licensee’s ITFS or MDS channel within the same market-wide
- In 1995, the Commission further relaxed its requirements by deciding that ITFS operators could fulfill their instructional obligations even if no more than one of their reception sites served an accredited educational institution.<sup>258</sup> In 1996, we authorized ITFS operators to expand their effective channel capacity through the use of digital transmission systems, making it possible to deliver more than a hundred channels over the available bandwidth. In doing **so**, we declined to

<sup>253</sup> Amendment of Part 74 of the Commission’s Rules and Regulations in Regard to the Instructional Television Fixed Service, **Second Report and Order**, 101 F.C.C.2d 50, 87 ¶ 95 (1985).

<sup>254</sup> *Id.* at 99-91, ¶¶ 98-106,

<sup>255</sup> Amendment **of** Part 74 of the Commission’s Rules and Regulations in Regard to the Instructional Television Fixed Service, **Order on Reconsideration**, 6 FCC Rcd 6,764 ¶¶ 51-52 (1991).

<sup>256</sup> Amendment of Part 74 **of** the Commission’s Rules and Regulations in Regard to the Instructional Television Fixed Service, **Report and Order**, 9 FCC Rcd 3,360, 3,365 ¶ 18 (1994).

<sup>257</sup> *Id.* at 3,365 ¶ 20

<sup>258</sup> *Id.* at 2,920 ¶ 75.